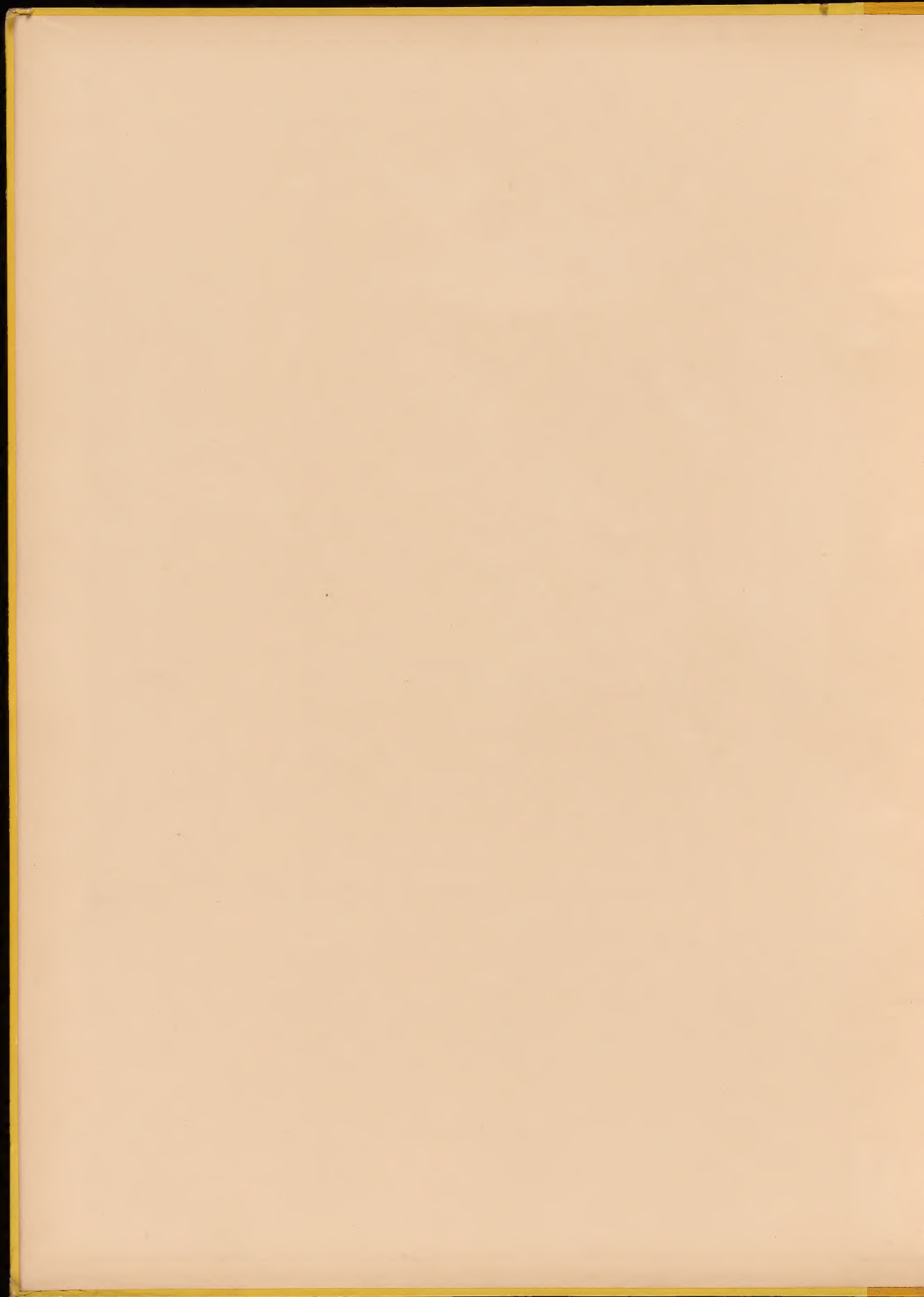


ORIENTAL CERAMIC ART



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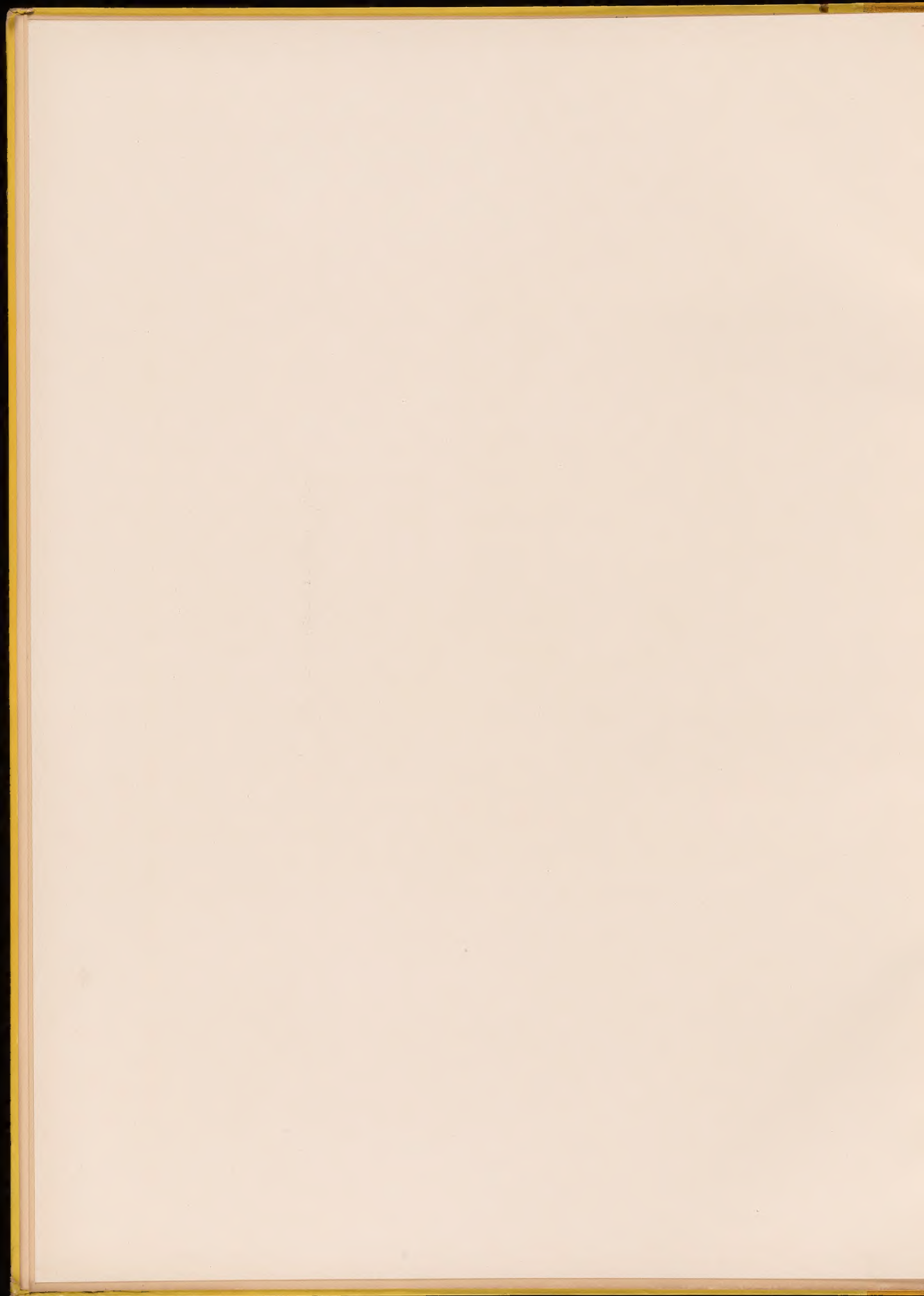


ORIENTAL CERAMIC ART

COLLECTION OF
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SECTION SIX



is often fixed by tracing back the piece to its original owner. The mug, for example, in Part IV of his work, decorated in coral-red, gold, and black, which has the arms, crest, and supporters of Thomas Trevor, created Baron Trevor of Bromham, December 31, 1711, emblazoned upon it, must have been made in this reign, because Lord Trevor died June 19, 1730, the impaled arms being those of his second wife, Anne, daughter of Robert Weldon, Esq.

A teapot of "armorial china," with a ducal coronet upon it, is illustrated in Fig. 262, and a vase painted with copies of European pictures by a Chinese artist in Fig. 263. The vase shown in Fig. 264 is one of the class fashioned in European style, with branches of fruit molded round the pedestal, and a delicate interlacement of wild roses and other flowers filling the hollows of the flowing bandlike handles; it is decorated in gold with phoenixes and dragons, the latter painted on the outside of the handles, with their centipede bodies and winged insect heads, and of very un-Chinese aspect.

"30. Copies of porcelain, painted in monochrome yellow, with chiseled green designs. (仿澆黃錐綠花器皿)"

The porcelain copied here must have belonged to the class decorated in mixed enamel colors, which I have described under the reign of K'ang-hsi, at the end of Chapter X. The designs of flowers, dragons, phoenixes, etc., were chiseled in the paste, and filled in with green enamel, while the rest of the surface was enameled yellow, the two colors being laid on with a brush *sur biscuit*.

"31. Copies of monochrome-yellow porcelain. (仿澆黃器皿)"

"Two kinds are made: (1) With plain ground (*su t'ü*), (2) with engraved designs (*chui hua*)."

The word *chiao*, used here, means literally "watered," but it does not imply the idea of "pale," as it is sometimes rendered; this is proved by the fact that in the modern lists it is replaced by another character of the same sound, meaning "bright" or "pretty"; it is used only of single colors. The tint of the "imperial yellow" of the time was orange, due to the presence of iron with the antimony. It is the "prohibited color" of the present day, sacred to the emperor, and is often enameled over imperial five-clawed dragons, disporting in clouds chiseled in the paste under the glaze.

"32. Copies of monochrome purple-brown porcelain. (仿澆紫器皿)"

"There are two varieties made: (1) With plain ground (*su t'ü*), (2) with etched designs (*chui hua*)."

The *Chiao Tsü* is the purplish-brown single color, produced by the cobaltiferous ore of manganese (*ch'ing liao*), which shares with the "imperial yellow," and the transparent green of camellia-leaf tint, the distinction of being used for the emperor's services of porcelain.

"33. Porcelain with engraved designs. (錐花器皿)"

"All the different kinds of glazes may have this decoration."

The engraved designs (*chui hua*) are etched at the point with a graving tool in the paste of the piece before it is quite dry, and it is subsequently glazed by immersion, or by sprinkling.

The white vase (Fig. 265) of the "Fên-Ting" class is an example of this work, having on the front and back of its swelling body the figure of a five-clawed dragon, enveloped in clouds, delicately etched in the paste under the ivory-white glaze.

"34. Porcelain with embossed designs. (堆花器皿)"

"These may be associated with all the different kinds of glazes."

The embossed designs (*tui hua*) are worked in relief upon the paste, the outlines having



FIG. 264.—White Vase penciled in gold with phoenixes and conventional scrolls, and enveloped with fruit and flowers delicately fashioned in complete open-work relief.

been previously traced with a graver, and any additional paste required is applied by a brush. *Pâte-sur-pâte* reliefs are now executed on porcelain in this way all over the world. The reign of *Yung-chêng* is especially distinguished for this kind of work.

"35. Coral-red porcelain. (抹紅器皿)."

"Reproduced from old pieces."

The term *Mo Hung* is applied to the process of painting the coral-red monochrome derived from iron over the glaze with an ordinary brush. The characteristic tones of color are perfectly exhibited in Plates XXXII and XCII.

"36. Porcelain decorated in coral-red. (彩紅器皿)."

"Reproduced from old specimens."

The term *Ts'ai Hung* means "Painting in red," just as *Ts'ai Shui-mo* (No. 40) means "Painting in black." It is applied to the art of penciling the decoration in coral-red over the glaze, the piece being fired afterward in the muffle stove. Plate LXVII displays a peerless model.

"37. Porcelain enameled yellow after the European style. (西洋黃色器皿)."

The heading leaves it an open question whether it was the form of the pieces, or the enamel color, that was modeled after the European style. In all probability it was the color, and the beautiful lemon-yellow, which makes its appearance now for the first time on Chinese porcelain, would be the new shade indicated. The tint is perfectly shown in the ground of the vase which is illustrated in Plate LXV.



FIG. 265.—Delicate White Vase with looped handles springing from dragons' heads, and dragon designs lightly etched in the paste under the ivory-white glaze.

"38. Porcelain enameled purple after the European style. (西洋紫色器皿)."

"39. Silvered porcelain. (抹銀器皿)."

The term *Mo Yin*, "Painting with silver," refers to the application of the metal in the form of an enamel as a single color. It was not spread upon white porcelain, but over a coat of pale golden tint, lightly colored with the "dead-leaf" or *tsü-chün* glaze. The enamel had to be gently fired in the muffle stove on account of the fugitive nature of the silver.

"40. Porcelain decorated in ink black.* (彩水墨器皿)."

The decoration of porcelain by pictures penciled in black or sepia was a novelty introduced at this time. Père d'Entrecolles describes in the last paragraph of his second letter how attempts had been made to paint vases with the finest Chinese ink, but all in vain, as the porcelain always came out white—a result not very surprising—as the carbon to which the color of Chinese ink is due would be immediately dissipated in the furnace. The ruby-backed eggshell plate shown in Fig. 230 is a fine example of painting in sepia, having the encircling bands of basket-work, diaper, and brocaded patterns, as well as the picture which forms its main decoration, all penciled in that tint. The picture represents the dragon procession of the great midsummer festival, which is celebrated throughout China on the fifth day of the fifth moon. The large barge made in the form of a dragon, attended by a smaller boat with a band of music, is being towed along a river, accompanied by two lines of horsemen. The banks are fringed with willows, and the crenelated wall of a city is seen in the background, which is filled in with the usual details of a Chinese landscape.

"41. Reproductions of pieces of pure white porcelain of the reign of *Hsüan-tê*. (仿宣寧瑣白器皿)."

"These include many different objects, thick and thin, large and small."

The first word in the compound term *F'ien-pai* used here (the fourth and fifth characters)

* In Julien's list, which is extracted from the *Fou-lang-hsien Chih*, there is an interesting note attached here, which is made, however, into a separate heading. It says that "by the new process the details of landscapes and figure scenes, flowering plants and birds, are all executed with shading, so as to reproduce the light and dark strokes in the original pen-and-ink drawing."

means "filled in," or "fully," but another word having the signification of "pure" is often substituted for it. Few ceramic terms have, however, given rise to so much misunderstanding, owing to a gratuitous assumption that it was glazed white in order to be afterwards "filled in" with enamel colors. So Du Sartel creates a class with the heading of "T'ien Pai," to include a variety of objects painted in colors *sur biscuit*—a class which, as Grandidier justly observes, threatens to remain without a member to represent it. The "pure white" porcelain of the time, which was said to rival the finest and most translucent white jade, has been already sufficiently described in Chapter VII, under the reign of Hsüan-té (1426-35).

"42. Copies of Chia (-ching) Porcelain painted in blue. (仿嘉寧青花)." *(Fang Chia-ching)*

The blue and white decoration of the Chia-ching period (1522-66) was distinguished for its deep, strong coloring. It has been fully described already, and is well illustrated in Plate XLIX.

"43. Copies of Ch'eng-hua Blue and White Porcelain with the decorations penciled in pale blue. (仿成化寧淡描青花)." *(Fang Cheng-hua)*

Reproductions of this period are much more common in collections than the originals, although genuine pieces occasionally occur. They are small in size, boxes for seal vermilion, miniature vases, wine-cups, or tiny saucers, and usually have the mark of Ch'eng-hua (1465-87) delicately penciled underneath in the same gray-toned blue with which the decoration is painted. The technique of the drawing in these pieces is remarkable for its clear penciling and miniature-like finish, and a small round box, as well as its cover, will often be found most elaborately painted both inside and outside.

"44. Rice-colored glazes (米色釉)." *(Mi-se)*

"These differ from the reproduction of the rice-colored glaze of the Sung dynasty (No. 12). They are of two kinds: (1) pale (*ch'ien*); (2) deep (*shên*).

"45. Porcelain decorated with underglaze red. (釉裏紅器皿)." *(Yü-li-hung)*

"In one class of pieces (1) the decoration is entirely painted in the underglaze red; another class (2) has green leaves in combination with red flowers."

The term *yu-li-hung* (the first three of the group of five Chinese characters immediately above this) means literally "red inside the glaze"; the color, due to copper silicate, ranges from a bright "peach-bloom" tint to a dull maroon. It is a color of the *grand feu* of very ancient origin in China.

The two classes given above may be illustrated by two beautiful vases, both dating from the preceding reign of K'ang-hsi:

1. Heavy solid vase (Fig. 229), of finished form and technique, decorated in maroon copper-red, under a white glaze of harmonious translucent tone, with five horizontal bands of dragons and other grotesque monsters in scrolled sea-waves, separated by narrower bands of diaper and lozenge fret, and with two rings of formal foliations encircling the lip. The "six-character mark" of the reign of K'ang-hsi (1662-1722) is penciled underneath in cobalt-blue in the style of the "peach-bloom" vases.

2. A small vase (Fig. 266), of globular, bowl-like form, a writer's water-pot (*shui ch'ing*), with the rim of its mouth strengthened by a silver collar. It is decorated soberly and chastely with two little sprigs of peony, which have the blossoms tinted a warm maroon, and the tiny leaves, outlined and veined with the same underglaze red, filled in with a bright green overglaze enamel. The mark is precisely similar to that of Fig. 229.

"46. Copies of coffee-brown glazes. (仿紫金釉)." *(Fang Tzu-chin)*

"Two different shades are produced: (1) reddish (*hung*); (2) yellowish (*huang*)."

The Tzu-chin, or "burnished gold," glaze is derived from yellow ferruginous clay (*huang-*

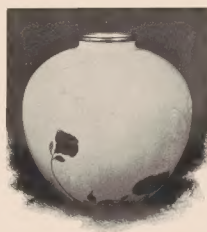


FIG. 266.—Globular Vase of perfect technique, lightly decorated in maroon, with peony sprays which have the leaves touched with green; mark, K'ang-hsi.

t'u) and varies in shade, in proportion to the concentration of the glaze, from the darkest chocolate-brown to the tint of "old gold." It is of ancient origin, and has been referred to many times already under its various names of "fond-laqué," "dead-leaf," "coffee-colored," "café-au-lait," "or bruni," etc.

"47. Monochrome yellow porcelain decorated in the five enamel colors. (淺黃五彩器皿).
"This is a novel decoration founded upon recent experiments."

The enameled yellow ground glaze with a close pattern of spiral will give an idea of the class. Large body, twenty-one inches high, rich-gilding, with the ground of scrolls, interspersed with col-stand out, in high embossed of fruit, incense urns, guitars, scroll paintings, the varied ap-mingled with emblems and brilliant enamels of the *Yung-*

A charming little vase, yellow background, which may is shown in Fig. 261. It is with a few touches of white with daisies growing from rocks, and The details of the decoration paste. The yellow ground, of and the foot is coated under-yellow glaze, and has no mark

"48. Copies of monochrome-
"Two kinds are made: (1)
with engraved designs (*chui*

The green monochrome bright, attractive color composed with a lead flux. Bowls and dishes of imperial ware, often etched with dragons under the glaze, are not rare, but vases are less common, and prized accordingly; they are usually pieces that once belonged to temple altar sets.

"49. Porcelain painted in colors in European style. (洋彩器皿).

"In the new copies of the Western style of painting on enamels (*fa-lang*) the landscapes and figure scenes, the flowering plants and birds, are, without exception, of supernatural beauty and finish."

The class of *Yang Ts'ai*, or "Foreign Coloring," is very extensive and varied, as it includes not only the vases, eggshell plates, and other things painted with foreign designs, but also objects decorated with Chinese scenes in the same class of colors. It represents, more or less, the class that has been called the *famille rose*, on account of the prevalence of a pink among the enamel colors. In addition to the pink and crimson derived from gold we notice a bright lemon-yellow, a pale green, and a general preponderance of soft tints in marked contrast to the bold, vigorous coloring of the *K'ang-hsi* epoch. The colors were those previously in use among enamellers in copper, and were first introduced into China from abroad, probably from India. The art of painting in enamels upon copper flourished in China at the same time, and it would be easy to collect a series of rose-backed and crimson-backed copper dishes decorated in the same characteristic style, and painted in the same colors, as the eggshell porcelain dishes of the period.

"50. Porcelain with embossed designs executed in undercut relief. (拱花器皿).

"These are applied in combination with all the different colored glazes."



FIG. 267.—Ch'ien-lung White Vase of quatrefoil section, with embossed designs of floral scrolls and bats; etched seal underneath.

was either plain or etched in the scrolls. A description of a piece bottle-shaped vase with swelling ly decorated in enamel colors with yellow enamel engraved in ored flowers, among which relief, vases of flowers, bowls chessboard, fans, books, and paratus of a Chinese library, symbols, all painted in the *ch'eng* period.

decorated in colors upon a also be referred to this period, painted in green and purple, peonies, chrysanthemums, and with butterflies flying above. are all delicately etched in the pure tone, is minutely cracked, neath with the same *truite* attached.

green porcelain. (仿淺綠器皿). with plain ground (*su t'i*); (2) *hua*).

(*chiao lü*) of this period is a of copper silicate in combination

PLATE LVII.

LANG YAO VASE

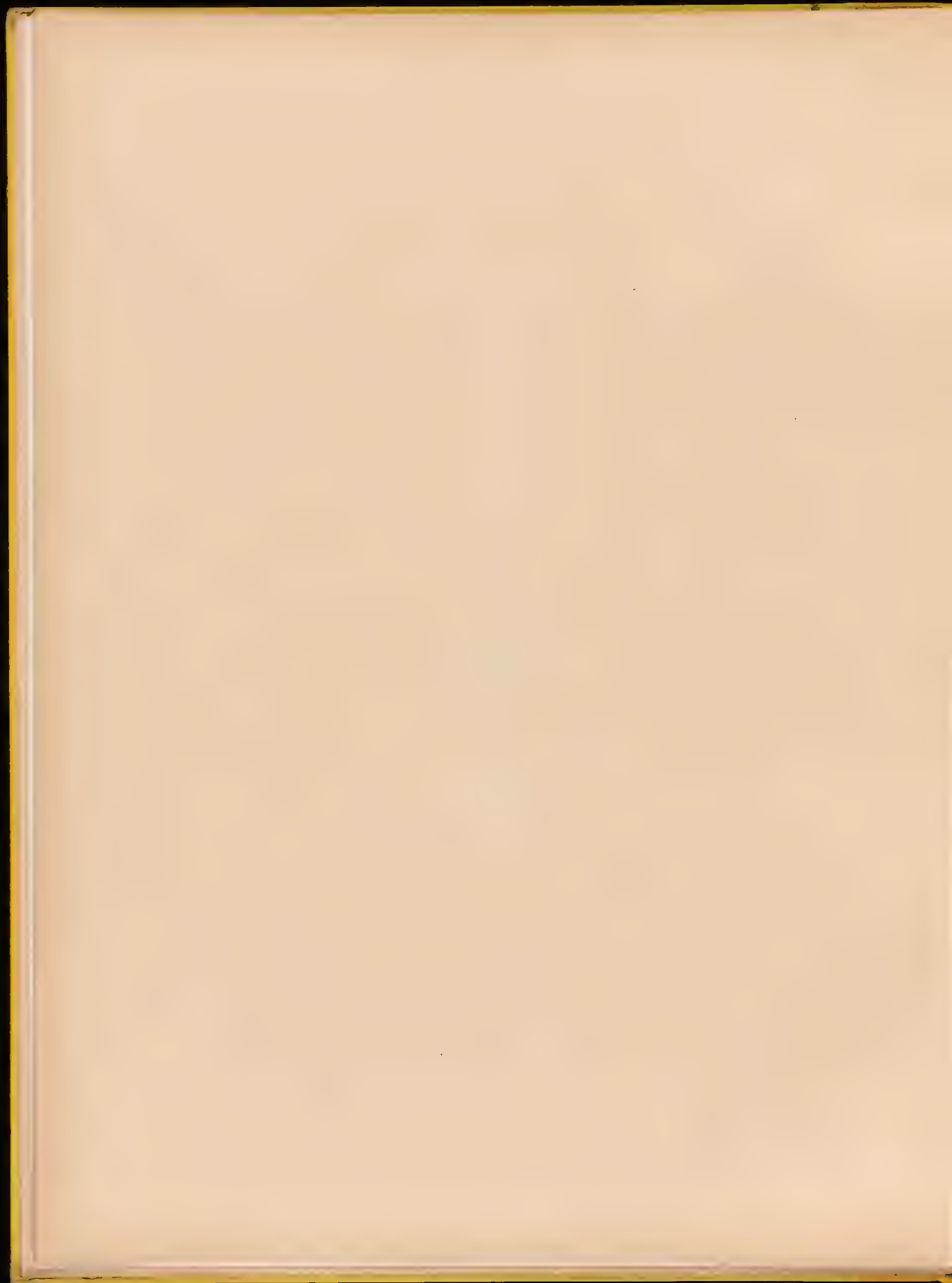
*V*ASE (Ping), 18 inches high,
of the celebrated Lang Yao, of
the reign of K'ang-hsi (1662-
1722). Bottle-shaped, with swelling
body and tall, wide, cylindrical neck;
the rich, deep glass, crackled through-
out, exhibits the characteristic crimson
tints of sang-de-bœuf in its darkest
mottling.

The base is covered underneath with
a gray, "rice-colored" glass, slightly
mottled with brown.



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The term *kung-hua*, which means literally "arched designs," is used to convey the idea of more salient relief than that of *hui-hua*, or "embossed designs," of No. 34, although the two terms are occasionally interchanged. The dragon curled round the neck of the celadon vase illustrated in Plate XL is an example of this kind of work which may be referred to the reign of Yung-ch'eng.

"51. Porcelain enameled Red after the European style. (西洋紅色器皿)." *(S'ang-hsi)*

The single colors included in this class would be the crimson (*yen-chih hung*) derived from gold, and the pink (*fên hung*) obtained by an addition of a proportion of the white enamel, obtained from arsenic, to the crimson. A beautiful example of the latter monochrome, a *rose d'or* of the "rose Dubarry" tint, which dates probably from this period, is shown in Plate LIII.

"52. Copies of the Black Glaze. (仿烏金釉)." *(S'ang-hsi)*

There are two varieties of this made: (1) with the decoration reserved in white upon the black ground; (2) with the black ground penciled over in gold.

These would be reproductions of the so-called "mirror-black" monochrome glaze, which was one of the special triumphs of the potters of the preceding reign of K'ang-hsi, and which is well illustrated in Plates IX, LXI, and LXII. The copies have an intense lustrous depth, but without the greenish, iridescent tones of the originals.

"53. Porcelain enameled Green after the European style. (西洋綠色器皿)." *(S'ang-hsi)*

This would be the pale-green monochrome, which is occasionally found replacing the pink on the back of eggshell dishes of the time, or applied as a single color on pieces interrupted by painted medallions.

Sometimes it is of palest *eau-de-Nil* tint. It is made by tingeing the white enamel of the muffle stove with a little of the green enamel derived from copper.

"54. Porcelain enameled Black after the European style. (西洋烏金器皿)." *(S'ang-hsi)*

"55. Porcelain enameled in Gold—i. e., Gilded. (抹金器皿)." After the Japanese (*Tung Yang*).

"56. Porcelain painted in Gold. (描金器皿)." After the Japanese.

"57. Porcelain painted in Silver. (描銀器皿)." After the Japanese.

The Japanese are commonly called *Tung Yang Fên*, or "Eastern Sea Men," by the Chinese, and Julien is incorrect in translating the term as "l'Indo-Chine," the natives of which would be "southerners," and who, moreover, never had any porcelain to copy. The "old Imari" porcelain of Japan, which was decorated after the pattern of later *Ming* times, and marked with the same Chinese marks, now comes across to be recopied at Ching-tê-chên, just as old Delft plates, copied from older Chinese blue and white, were reproduced later in the same Chinese factory, as is proved by some curious specimens on the shelves of the British Museum. It is not so easy to distinguish the copies of the old Japanese pieces, with a simple decoration of a pair of quails, a straw hedge, and such-like, painted in soft colors, from the originals; they form a subdivision of the class of *Yang Ts'ai* (No. 49). The Chinese are inveterate copyists, and it is fortunate that they usually register the fact, as in the above three cases.



FIG. 268. Cylindrical Vase, one of a pair, richly decorated in K'ang-hsi enamel colors; European mounts.



FIG. 269.—Snuff-bottle, decorated in blue and white, with peach-bloom dragon; mark, Ch'ien-lung.

CHAPTER XIV.

THE CH'EN-LUNG PERIOD.

AFTER the death of the Emperor *Yung-ch'eng*, in 1735, he was succeeded by his son, who began his reign with the title of *Ch'ien-lung* on the first day of the following year, and reigned till the end of the year 1795, when he resigned the throne after a long reign of sixty years, in accordance with a vow that his reign should not exceed that of his celebrated grandfather *K'ang-hsi*.

The reign of this last emperor, as we have seen, ranks as by far the most brilliant period in the history of the ceramic art. The reign of *Yung-ch'eng* was distinguished, as the official annalist has just told us, by many new inventions and by a remarkable success in the reproduction of the colored glazes of olden times, and in the long reign of *Ch'ien-lung* the new inventions introduced in the previous reign were gradually developed, till the porcelain attained a finished technique and a decoration of perfect symmetry, which are among its chief characteristics—so much so, in fact, that one is apt to get tired at last of its conventionality and almost mechanical perfection, and long for the artistic irregularity and the bold, vigorous coloring of the older style, which is so varied as never to be monotonous.

The successes of the early years of *Ch'ien-lung* are due to T'ang Ying, the famous director of the imperial manufactory, who occupies the same position now that Nien Hsi-yao did in the previous reign of *Yung-ch'eng*. T'ang Ying received his first appointment in the ceramic field of work from the emperor in 1728, and was ordered to proceed at once to Ching-tê-chên, to take charge of the imperial works under Nien Hsi-yao, who was appointed in the following year commissioner of customs at Huai-an-fu, still retaining, however, his post of chief director of the imperial porcelain manufactory. In the first year of the new reign (1736) T'ang Ying succeeded him in these two posts, and he remained at Huai-an-fu till 1739, when he was transferred to Kiukiang-fu, where he lived for the next ten years as Chief Commissioner of Customs of the Provinces of Kiangsi, Kiangsu, and Anhui, and Director of the Imperial Manufactory. He was a voluminous writer, and his writings have been published in a collected form, including disquisitions on his work, as well as the poems composed by him, as he surveyed the surrounding scene from the top of the Jewel Hill, at Ching-tê-chên and on many other occasions. He relates how, for the first three years, he always had his meals with the workmen and slept in the same room with them, so as to gain a familiar knowledge of all the smaller details of their handicraft. A chapter of his autobiography may be quoted here from the *Chiang hsi t'ung chih*, which says that the intimate knowledge that T'ang Ying finally succeeded in acquiring of the creative power of the fire in the development of colors had certainly never been equaled:

"Among the least of crafts, which can yet, however, supply the needs of an emperor as



FIG. 270.—Cracked Yao-pien Vase of the Ch'ien-lung period, with transmutation splashes of mingled green, olive-brown, and purple.

PLATE LVIII
SMALL "LANG YAO" VASE

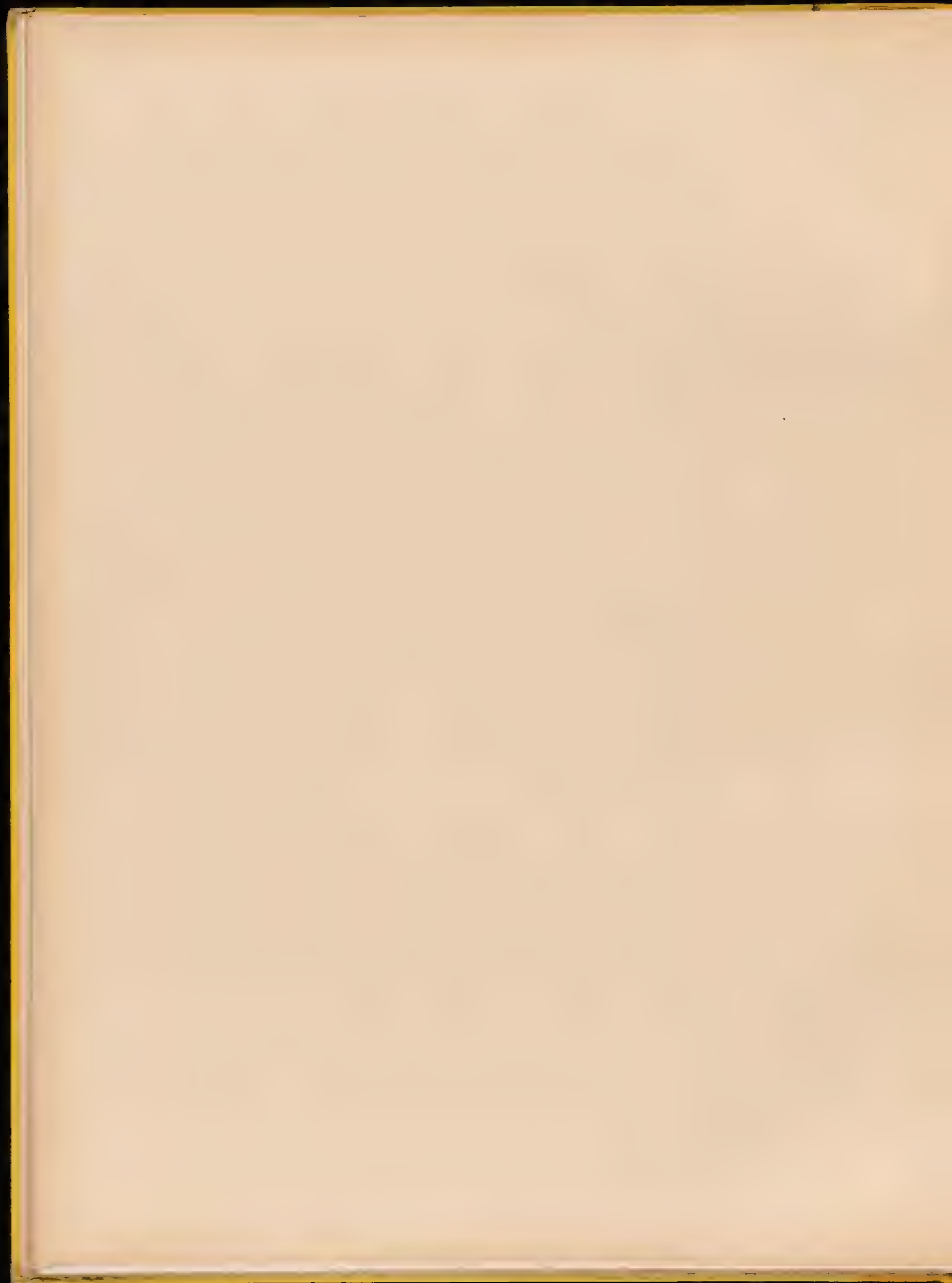
FLOWER-VASE (Hua Ping), 8 1/4 inches high, of form similar to that of the white vase with the mark Hsuan-ho illustrated in Plate XXXIX, covered with the crackled sang-de-boeuf glaze, the characteristic colors of which are well represented in the lithograph.

The mottling of apple-green crackle exhibited near the foot is still more marked on the opposite side of the vase. The base underneath is coated with a crackled white glaze, barely tinted with green. It belongs to the reign of K'ang-hsi (1662-1722).



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well as afford a means of livelihood for the common people, is the art of the potter in the manufacture of vessels, which, in their highest uses, figure as sacrificial bowls and dishes, in their lowest as articles of daily service for eating and drinking. Porcelain does not date from to-day. Researches show that it was first made during the *Han* dynasty, that the industry has been constantly practiced down through succeeding generations, and that among all the different localities that of Ch'ang-nan (Ching-tê-chên) has prevailed and flourished beyond any other. The preceding *Ming* dynasty built the imperial manufactory at the foot of the Jewel Hill, and appointed officials to superintend the work, but their regulations were bad, the public funds and materials were wasted, and the people were oppressed, so that they were unable to gain a living by their work. Who will dare to say that pottery is a mean thing, and that therefore the superintendents need not be so very careful?

"I (Ying), a native of Shêng-yang, in the province of Kuantung (Chinese Manchuria), whose family has for generations shared in the imperial favor, since they followed the dragon standard to Peking* had my name enrolled at my birth in the Nei-wu-fu, the 'Imperial Household.' In my youth I Yang-hsin-tien, and worked there for that the emperor now reigning came to heaven and earth in acknowledgment of be secretary (*lang*), and only fear my in the autumn of the sixth year (1728) month, the late Prince of Yi conveyed (imperial) orders, appointing me (Ying) to superintend the porcelain manufactory in the province of Kiangsi, workmen in cases of disease and trade among the merchants. The emperor's grace is all-pervadable. In reverent obedience once from the capital, and, in the arrived at the manufactory at regulate the work of the potters obedience to the decree. With ing a 'cash' of the funds intrusted according to the indents, statement of accounts, have been the superintendency of the imperial household (Nei-wu-fu). Up to now, the cyclical year, *yi-mao* (1735), I have been seven years engaged in the work. Although but 'a broken-down horse,' I put forth all my strength. My ability is poor, and my faults many, and it is only by the emperor's grace that I have escaped punishment. An annual allowance (in addition to salary) of five hundred taels has been granted me for fuel and water, so my family subsists on the imperial bounty, which a life's poor work could ill requite. The potter's work is a humble one, yet my own life, as well as that of the craftsmen, depend on the favor of the emperor, and I can not but proclaim the imperial grace. The ritual wine-vessels (*tsun*) and the sacrificial bowls (*kuai*) are now all made of clay, so as not to waste the national resources, and the daily wants of the people are also supplied by the potter's craft, so that the work must continue to be carried on by our successors. If the rules of the art be preserved, the labor will be halved, and the gain two-fold; if the rules be forgotten, money will be wasted, and the artisans' labor lost, so, for the use of after times, I have compiled the present epitome. Although I (Ying) dare not profess a complete knowledge of all the minute details of the ceramic art, yet I have prac-

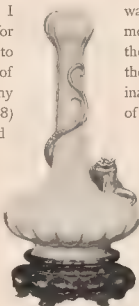


FIG. 271. -- Fluted Vase of the Ch'ien-lung period, enameled yellow, with a green dragon coiled round the neck in openwork relief.

* Many of the Chinese on the northern frontier joined the Manchus when they marched on Peking in 1643. They were enrolled afterward, on the Manchu plan, under banners, to form the Han Chitu, or "Chinese army," and their descendants are retained to the present day. T'ang Ying was a captain of his banner.

ticed it diligently for a long time, and am familiar with the official lists of the articles produced, with the composition of the glazes used in their decoration, with the designs and dimensions of the pieces, as well as with the wages and food of the workmen, their rewards for diligence, and their fines for negligence. Although naturally stupid, I have learned one or two of these things, which I have collected and written down, and had them cut upon stone tablets, erected on the south side of the Jewel Hill, so that my successors in the directorship may have some materials for further researches, and be encouraged in their careful zeal; to put on record also the emperor's compassion for the people, and his instructions that the funds should not be wasted nor the workman's labor unrecompensed. What I have carefully written, I know personally, and I submit it with deference to the officials that shall succeed me. 'The farmer may learn something from his bondman, and the weaver from the handmaid who holds the thread for her mistress.'"

This scrap of autobiography, written in the high-flown language, bristling with classical quotations, affected by the Chinese *literati*, however feebly rendered in the translation, is sufficient to show the zeal of the worthy T'ang Ying in his work. Although nominally subordinate to Nien Hsi-yao, who was promoted to be commissioner of customs the year after the arrival



FIG. 272.—Bean-shaped SHU-F-bottle, with archaic t'z'u in blue and green on yellow ground; K'ang-hsi period.

of T'ang Ying at Ching-tê-chên, and transferred to his distant post at Huai-an-fu, the work must have owed much to his personal superintendence. In the first year of the reign of *Ch'ien-lung* (1736), T'ang Ying became in his turn commissioner of customs for the vicereignty, and was himself transferred to Huai-an-fu, where he remained three years, retaining, like his predecessor, the post of director of the porcelain manufactory, but only making, he tells us, one official visit of inspection to Ching-tê-chên during the period.

In 1739 the commissionership was finally transferred to Kiukiang-fu, and the director was, at his new post, within easy reach of the scene of his former labors. His family, who were, as we have seen, originally natives of Manchuria, were enrolled by the new dynasty under the Han Chün, or Chinese Bannermen, and T'ang Ying was captain of his

banner. A full list of his titles, in the year 1741, is inscribed upon the long mark of dedication which has been taken from an altar candlestick, made by him in that year, and reproduced in facsimile in Chapter IV. In addition to his appointments in connection with the Imperial Household at Peking, he was then the imperial commissioner in charge of the customs stations of Huai-an-fu, Hai-chou, and Su-ch'ien-hsien, in the dual province of Kiangnan, and of Kiukiang-fu, in the province of Kiangsi, with the control of all the customs dues of the vicereignty, made up of these provinces, and was at the same time director of the imperial porcelain manufactory. In the year 1743 he visited Peking, and he brought up with him on that occasion, no doubt, the sacrificial set of utensils, which he had made for the Taoist temple near that city. As soon as he arrived at the palace he was handed an imperial decree, dated the eighth day of the fourth month of that year, directing him to write a detailed description of twenty illustrations of the manufacture of porcelain, which had been found in the imperial library, and to send back the album as soon as he had finished. The pictures were returned in the following month to their former seclusion, and have never been, I believe, published. With regard to the description written by the accomplished director, and submitted at the same time to the imperial glance, no Chinese book on ceramic art is considered to be complete without it, and I will translate it in the next chapter from the pages of the annals of the province of Kiangsi, so often quoted.

T'ang Ying returned to his post at Kiukiang the same year and remained there as director of the porcelain manufactory till 1749.

The writers of the *Ching-tê-chên Tao lu* say, under the heading of "The Porcelain of

T'ang of the Reign of *Ch'ien-lung*": "This heading refers to the porcelain made at the imperial manufactory (at Ching-tê-chên) under the direction of T'ang Ying, Secretary of the Imperial Household. The Honorable T'ang, in the cyclical year *hsü-shên* (1728) of the reign of *Yung-chêng*, first came to reside at the imperial manufactory as assistant to the director Nien, and he acquired a great reputation for his work. In the first year (1736) of the reign of *Ch'ien-lung* he was placed in charge of the customs at Huai-an-fu. In the eighth year* (1743) he was transferred to be commissioner of customs at Kiukiang-fu. In both these posts he retained the directorship of the porcelain manufacture. He had a profound knowledge of the properties of the different kinds of earth and of the action of fire upon them, and took every care in the proper selection of the materials, so that his productions were all highly finished and perfectly translucent. In the reproductions which he made of the celebrated porcelains of ancient times every piece was perfectly successful; in his copies of famous glazes there was not one that he could not cleverly imitate. His genius and ability were so great that he succeeded in everything he attempted. He also made porcelain decorated with the various colored glazes newly invented—viz., foreign purple (*yang tsü*), cloisonné blue (*fa ch'ing*), enam-



FIG. 273.—Ch'ien-lung Vase of Ku Yueh Hsüan style, delicately painted in enamel colors.

eled silver (*mo yin*), painted in sepia (*ts'ai shui-mo*), foreign black (*yang wu-chün*), painted in the style of cloisonné enamels (*fa-lang hua fa*), painted with foreign enamel colors on a black ground (*yang ts'ai wu-chün*), with white designs reserved on the black ground (*hei ti pai hua*), with the black ground penciled over in gold (*hei ti miao chün*), the new sky-blue monochrome (*ts'ien-lan*), and the transmutation glazes (*yao-pien*). The paste of the pieces was white, rich, and compact; the fabric, whether thick or thin, was brilliant and lustrous; and the imperial porcelain attained at this period its greatest perfection."

"He also, in obedience to an imperial decree, respectfully described the 'Twenty Illustrations of the Manufacture of Porcelain,' arranged them in order, and wrote detailed descriptions of the illustrations, which were presented by him to the emperor."

"The learned Li chü-lai of Lin-ch'üan in his preface to the Collected Works of the Honorable T'ang, says: 'As results of his genius alone, flowering and producing fruit in his mind, the ancient manufacture of the large dragon fish-bowls and of the Chün-chou porcelain, which had long been lost, was re-established; and turquoise (*fei-ts'ü*) and rose-red (*mei-kuei*) glazes were produced by him of new tints and rare beauty. T'ang was thoroughly devoted to his work, and the brilliancy of his genius is reflected in the beautiful porcelain made by him.'"

When T'ang Ying was appointed to his new post at Huai-an-fu in 1736, he left behind, for the instruction of his successors, a collection of memoranda entitled *T'ao ch'eng shih yü k'ao*, "Draughts of Instruction on the Manufacture of Porcelain," which are often quoted in official books. The author writes in his preface to these drafts, which is quoted in the Fou-liang-hsien Annals: "When I was sent by imperial decree in the sixth year of the reign of *Yung-chêng* (1728) to undertake the superintendence of the porcelain manufactory, I was unacquainted with the finer details of the porcelain works of the province of Chiang-yu (Kiangsi), where I had never been before. But the materials are the same as those employed in other art-work and are changed in the fire in accordance with the chemical laws of the five elements, and they are combined after old pre-



FIG. 274.—Libation Cup of Ku t'ung ts'ü, being painted in enamel, with gold to imitate patinated bronze, mark, Ch'ien-lung

* This must be an error. The official annals of the province of Kiangsi make his appointment date from 1749, and this is confirmed by the inscription in Chapter IV, which proves that he was commissioner at Kiukiang in 1741.

scriptions, as well as by new experiments. I worked hard with heart and strength, and for three years shared with the workmen their meals and hours of rest, until in the ninth year, *hsin-hai*, of the cycle (1731) I had conquered my ignorance of the materials and processes of firing, and, although I dared not claim familiarity with all the laws of transformation, my knowledge was much increased. After five more hot and cold seasons had passed by, during which 'his pottery vessels were not imperfect and the potter had not asked for sick-leave,' the accounts were made up to the thirteenth year of *Yung-ch'eng* (1735), and it was found that, for an expenditure of several tens of thousands of taels of treasury silver, no less than between 300,000 and 400,000 pieces of porcelain, comprising all kinds of vases and round ware, had been sent up to the palace at Peking for the use of the emperor. After the sovereign had flown up to heaven on a dragon, in the first year of his successor *Ch'ien-lung* (1736), I received the appointment of Commissioner of Customs at Huai-an and had to leave the immediate superintendence of the porcelain works. For this drafts of the instructions of the scattered leaflets as have them in order, adding some work during the nine years in

T'ang Ying is the last of anything outside of the pages names of a long line of his other artist is often talked of as years of the reign of *Ch'ien-lung* a contemporary. This is the adopted the studio name of *Ku Ancient Moon*, by splitting the name, into its two component in Chapter IV. He was, I am palace at Peking, where a manu- superintendence of the Jesuit tioned here only because his been sent down to Ching-té- celain, which was considered by material than glass. The glass a clear glass of greenish tint

executed in colored glasses, and an opaque white glass, which was either engraved with etched designs or decorated in colors. It is the former kind that is most highly valued in the present day, a tiny snuff-bottle being sold for as much as several hundred taels, or even for a thousand dollars; the latter kind was the type that was copied in porcelain. The result was the ware of peculiar vitreous aspect which is technically known as *Fang Ku Yueh Hsüan*, or "copies of Ku Yueh Hsüan." Mr. Hoppisley was one of the first to introduce these wares to the outside world, and he has exhibited several choice specimens in his collection at the Smithsonian Institution at Washington. He says (*Catalogue, loc. cit.*, page 423): "Ku Yueh hsüan* introduced about the year 1735 the use of an opaque white vitreous ware for the manufacture of articles of small dimensions, such as snuff-bottles, wine-cups, vessels for washing pencils in, etc. The vitreous nature of the body imparts a tone and brilliancy to the colors used in the decoration which is greatly admired, and the best specimens of this ware will well repay minute study. The choice of groundwork is effective, the grouping of the colors soft and harmonious, the introduction of European figures is interesting, and the arrangement of flowers evidence of the highest artistic skill. The earliest pieces were marked, usually in red, *Ta Ch'ing nien chih*,

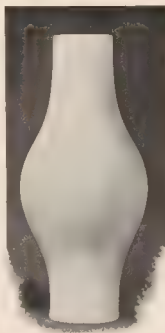


FIG. 275.—Yung ch'eng or early Ch'ien-lung White Porcelain of eggshell thinness; purest tone and perfect finish.

reason I have collected the these years, and as many of been preserved, and arranged notes of the progress of the which I have been director."

the directors of whom we hear of the annals, on which the successors are registered. One having flourished in the early *lung*, so that he must have been worker in glass named Hu, who *Yueh Hsüan*, "Chamber of the Chinese character *Hu*, his sur- parts, *Ku Yueh*, as explained told, a worker in glass in the factory was founded under the missionaries, and he is men- productions are said to have chen to be reproduced in por- the emperor to be a more noble made by him was of two kinds: with an embossed decoration

* Mr. Hoppisley seems to take Ku Yueh Hsüan to be the actual name of the man, whom he refers to as being "a subordinate officer, I believe in the directorate of the Ching-té-ch'ien factories."

PLATE LIX.

LANG YAO VASE.

LARGE VASE (P'ing), 21 inches high, of the celebrated Lang Yao, of the reign of K'ang-hsi (1662-1722), covered with the characteristic cracked, monochrome glaze of wang de-hsiao color. The colors, of varied tone, pass from apple-green to deepest crimson, through all intermediate shades, according to the degree of oxidation of the copper silicates in the glaze. The vase is green toward the edges, where the network of cracks is most clearly visible; red on the body, where the glaze runs down toward the foot in richly mottled streaks; and of dark, sanguineous tint on the shoulder, where the glaze is thickest. The rim is defined by flims of white glaze; the base is covered underneath with a cracked glaze of pale apple-green color.

The plate shows well the vertical play of colors, the cracked texture, and the stippled ground which marks this glaze—one of the most brilliant achievements of the Chinese potter. The reflections give a touch of contrast to the tone, and indicate the finished radiance of the surface lit up by the sun.



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'Made during the great Pure (the *Ch'ing* or present) dynasty,' the later pieces had the mark, within a square seal-like border, *Ch'ien lung nien chih*, 'Made during the reign of *Ch'ien-lung*,' engraved in the foot, and filled with a thick, bright blue enamel glaze. T'ang Ying (in his imitations of this vitreous ware in porcelain) appeared to have employed for his purpose a very pure glaze of a highly vitrifiable nature, and to have thereby effected an enamel brilliancy that no other porcelain shows, and to have also secured to a considerable extent the same soft transparency in the decorative colors which was so much appreciated on the Ku Yueh Hsüan vitreous ware. Specimens of this porcelain, which is quite rare, are held in very high esteem by the Chinese, alike for the purity of the paste, the brilliance of the glaze, and the beauty of the decoration, and are considered among the finest productions of the period during which the manufacture attained its highest excellence."

The glass ware referred to here is outside our province. Of the porcelain modeled in the Ku Yueh Hsüan type a beautiful specimen was illustrated in Fig. 68—a teapot with the mark of the *Yung-ch'eng* period penciled underneath in overglaze blue enamel. Another example is presented here in Fig. 273, which I will briefly describe:

Small bottle-shaped vase, with a globular body and gently tapering neck expanding above into a prominent lip, coated with a lustrous white glaze of vitreous aspect decorated with delicate enamel colors of the Ku Yueh Hsüan type. On the body is a picture suggestive of an autumnal scene, with roses growing by a rockery, trees with autumn-tinted leaves and marguerite daisies, in the foreground of which a pair of quails, beautifully painted with a miniature-like finish, stand out prominently. The neck of the vase is decorated with a ring of formal palmate design, the shoulder is encircled by two bands, a pink scroll worked in relief succeeded by a blue fret, and the lip is defined by a line of gilding.

There is a couplet of verse written at the back:

"Years roll by as we sit at the table, painting pictures in colors;
Charmed by all the happy notes of Nature, listening to the calling quails."

The headpiece is a small oval panel with the seal characters *Jen Ho*, "Benevolence and Harmony," inside; at the foot of the stanza are two small oblong panels with the inscription *Ssü Fang Ch'ing Yen*, "Serenity and calm throughout the empire." The motto is declared to be appropriate to the emperor alone, and it is outlined in red, the color of the sacred "vermilion pencil."

The next vase of Ku Yueh Hsüan style, exhibited in Fig. 263, is an example of the class decorated with European pictures. It is a small ovoid vase of broad shape, formed, as it were, of twin coalescing vases, with the line of junction indicated by a vertical groove. The shape is like that of the pair of vases of which one is illustrated in Plate LXXVI, and, like them, it once had a cover, now lost; the bottom has had a piece chipped out so as to remove the date of the four-character seal, penciled underneath in black, leaving only the tail-end *nien chih*, but we can not be far wrong in supplying *Ch'ien-lung* as the missing half. The vase is painted in delicate enamel colors, *rouge d'or* predominating. It is decorated with two large oval medallions and two small round panels with scrolled borders, displayed upon a floral ground, and with bands of ornamental design around the neck and foot, all in the ordinary Chinese style of the period. The small round medallions contain landscape sketches with European houses. The large oval panels are filled with copies of European pictures, cleverly executed, but betraying in the details the touch of the Chinese artist. In one there is a female figure in pink dress and purple robe with two children, copied, apparently, from a sacred picture representing the Virgin Mother with the Infant Jesus and St. James. The other, similarly shaped, and upon the opposite side, contains a picture of a garden scene with two girls in European costume, one of whom is carrying a basket of flowers.



FIG. 276.—K'ai-pien Vase with cracked glaze and undulatory surface, painted in subdued blues with touches of maroon red.

The enamel colors used in painting these vases are precisely those that had been previously used in the West in enameling upon metal. The working palette of the enamel painter was rich in variety of colors, as metallic oxides readily lend themselves to an infinite number of combinations with glass. The green, blue, red, turquoise, gray, orange, and yellow may be obtained either pure or compound, so as to form shades as gradual as a chromatic scale. The light-red color is called in old English books upon the subject "the chief and paragon of all." It is said to have been discovered by a goldsmith who studied alchemy, and found it one day at the bottom of his crucible in trying to make gold.

This last is the color which suddenly makes its appearance upon Chinese porcelain in the beginning of the eighteenth century, in common with the other new enamel colors which are known collectively to the Chinese potter as *Yang Ts'ai*, or "Foreign Colors."



FIG. 277. White Ovoid Vase etched with floral scrolls, and surmounted by a dragon in undercut relief, enameled dark red with touches of gold; mark, Ch'ien-lung.

The earliest date-mark found upon the "rose-backed" plates, which are decorated in these colors of the *famille rose*, is that of the cyclical year *hsin-ch'ou* (1721), the last year but one of the reign of *K'ang-hsi*. It was this emperor who was probably the means of introducing these colors into China, through the medium of the Roman Catholic missionaries, of whom he was a great patron. He founded a manufactory of colored glass near the palace at Peking, under their superintendence, where, no doubt, many of the materials were manufactured for the use of the school of enamelers upon copper that was also established at Peking about the same time under their tuition, and produced painted work executed in the style of Battersea enamels. He even tried to introduce the manufacture of porcelain, and had all the materials brought up to Peking for the purpose, as described by Père d'Entrecolles in his letters, but this project failed, partly on account, it is suggested, of the opposition of the porcelain guild. The enamelers in

metal were more successful, and their work was sent to Ching-tê-chên to be reproduced in porcelain. The same designs occur on both, and are associated with the same rose-colored grounds and pink diapers. I have a small mirror, for example, mounted in a copper frame, which is enameled at the back with the same sacred picture that is painted upon the vase that has just been described, and a long series of such identical designs might be collected. European pictures are not an inappropriate decoration for the enameled work, recalling its original source, but there is no excuse for the unseemly scenes which are occasionally associated with them, and which prove that the missionaries of those days were assailed with the same scandalous stories that are put forth about them in the present day.

Actual specimens of old European enamels were also sent at this period to Ching-tê-chên and copied in porcelain. This is proved by an interesting cup of Chinese porcelain from the Marquis collection at Paris,* which is thus described: "A wide shallow cup with two open flowing handles, of fine and light porcelain, an exact imitation, both in form and decoration, of the piece of Limoges enamel which has served as its model in China, so that it might even be mistaken for the original. It has, outside, ornamental designs reserved in white upon a black ground, enhanced by gilding; inside, it is decorated in different colors with flowers and fruit, executed with the enamels of the *famille verte*. Close to the basket of fruit painted in the bottom of the bowl there is found, faithfully reproduced, the monogram I. L. of the Limoges enameler, Jean Laudin."

One of the most remarkable features indeed of the practice of the ceramic art in China at this period was the way the world was ransacked for new objects to copy. Père d'Entrecolles describes how his mandarin friends pressed him to get for them new models from Europe for this purpose. In the last chapter we saw how specimens of ancient ware of all kinds were sent down to Ching-tê-chên to be copied. Pieces of "old Imari" porcelain came from Japan

* This cup is now, I have reason to believe, in the Granddier collection in the Louvre.

at the same time to be imitated. The author of the *T'ao Shuo* declares that the older designs in chiseled gold, in embossed silver, in carved jade and other hard stones, in lacquer ware, in mother-of-pearl inlaid work, in carvings of rhinoceros horn, bamboo, wood, gourd, and shell, were all, without exception, executed in porcelain, as exact copies of the originals, and that the potters were supplanting the skilled artificers in all these different branches of work. The texture of the ivory, shell, or bamboo is carefully indicated in the porcelain, and the surface colors are reproduced so as to bring out the tints of the variegated marble and pudding-stone, the mottled jade, the striped carnelian and agate, the veined walnut-wood, and the carved cinnabar lac, with such exactitude that it is necessary to handle the piece to convince one's self that it is really made of porcelain. The aspect of gold and silver was given by enamels prepared from the metals themselves; the surface tints of copper and bronze, the rust of iron, and the play of colors upon ancient patinated bronze in which the Chinese antiquarian takes so much delight, were produced by combinations of different glazes, applied either with the brush or by sprinkling over the first ground color.

A characteristic example of the iridescent "iron-rust" (*t'ieh-hsin*) glaze is illustrated in Plate XIX, showing a deep bronze-colored ground, speckled with lustrous metallic spots, and flecked with red clouds. In Fig. 274 is exhibited a specimen of the class of ancient bronze design which is known as *ku t'ung ts'ai*. It is a libation cup (*chüeh*) of antique style, molded in relief and enameled with color to imitate patinated bronze. The handle is fashioned in the form of a dragon, and the bowl of the cup is encircled by a broad sunken band containing archaic designs in relief, with an ogre's face (*t'ao-t'ieh*) under the lip, and conventional scrolls starting from dragons' heads round the sides. The surface, enameled olive-brown flecked with "tea-dust," is penciled in gold with scrolls and borders of rectangular fret; the ground of the sunken band, which is pitted, is partially filled in with a grayish-blue overglaze of mottled tints passing into green. There is a seal underneath, outlined in gold, *Ch'ien lung nien chih*: "Made in the reign of Ch'ien-lung." Some of the larger objects of this class exhibit a remarkable combination of brilliant colors, such as copper alone is capable of producing, and it is wonderful how the same tints are almost instantaneously brought out artificially by the oxidizing power of the furnace flames, that usually require centuries to develop by gradual oxidation of the metal buried in moist ground.

The technique of the class just described is similar to that of the transmutation, *flambé*, or *yao-pien* glazes, which derive their most brilliant colors from the same protean metal. These flourished abundantly during the Ch'ien-lung period, to which three of the vases shown in the colored illustrations may be referred. The egg-shaped vase in Plate XVI is a brilliant example of the kind, with its lightly crackled glaze vertically splashed with all the different tints imprinted by the flames as the liquescent glaze was running down in the furnace, passing from turquoise through purple and other intermediate shades of red to the richest crimson. The vase in Plate LXXXVIII has the same brilliant *flambé* glaze running down over its surface so as to form large tears, only partially covering the crackled surface of mottled olive-brown tint due to iron, which is often used on such pieces in combination with the copper that produces the typical colors. The quadrangular vase in Plate XLVI, with open scroll handles at the sides and relief panels in front and at the back, differs from the other two in having a very fine, compact, and white paste; the shape is one often reproduced in copper-red (*chi-lung*) vases of *flambé* type in the present day, some of which are of very brilliant color, albeit wanting in depth and too glossy.

With regard to the monochrome porcelain of this reign, the colors which distinguished the Yung-ch'ing period continued to be produced under the directorship of T'ang Ying, who had learned his art in the ateliers of the latter period. The soft red derived from gold, pass-



FIG. 278.—White Beaker of ancient bronze form and archaic design, with nine dragons in undercut relief, painted in delicate enamels.

ing from the deepest crimson of the rose petals, through "rouge red," or *yen-chih lung*, down to the palest of the pinks called by them *fên-lung*; the lemon-yellow, camellia-leaf, and paler tone of green, the bright blue, the brilliant glossy black, and the other colors of the foreign enamer's palette, were still prepared, although in process of time they gradually lost something of their pristine purity. The same may be said of the *soufflé* copper-red of ruby tone, and the sky-blue or *clair-de-lune*, the two finest shades of the Nien Yao. The coral-red, on the contrary, comes into greater prominence, and is gradually improved in tone till it excels that of any of older times,* as in the beautiful monochrome vase selected for illustration in Plate XXII, and in the vase shown pure vermilion ground round a enameled green with touches of yellow, and manganese brown or either plain or investing an etched in the part underneath the glaze. of the preceding reign, is of pearly tone; the egg-shell vase on the lines of the pink vase which is perfectly plain with in the paste defining the the foot, is a white vase be attributed to either A new shade which the single colors is blue known to *pao-shih lan*, or which is often tion with imperial engraved in the with a square seal period impressed un- the foot being coated

This last glaze, finely crackled, as is rich sapphire-blue color XXIX. Many of the time are, in fact, dis- this finely crackled re- the *fruité* of the French, roe" crackle of the glazes in these cases were applied, *sur biscuit*, on porcelain that had been previously fired in an unglazed state. The manganese-purple and the turquoise-blue of the time are among the finest of these, especially the latter, which excels that of any previous period in its mottled shades of purest cerulean hue, exactly resembling those of the plumes of the kingfisher, from which it derives its Chinese name of *fei-ts'ui*, which is contracted sometimes to *ts'ui sê, sê* meaning color. The tones of color are perfectly displayed in the two graceful beakers of ancient bronze design in Plates XLIV and XLV, the first of which is modeled with archaic details under the glaze, while the second, left plain, has nothing to detract from the symmetry of its outlines or the beauty of its coloring.



FIG 279.—Large Gourd-shaped Vase decorated with sprays of "The Hundred Flowers," painted in enamel colors; mark, Ch'ien-lung.

in Plate XXVI, where it forms a dragon pursuing the magic jewel, other colors. The ordinary green, purple are common single colors, decoration engraved with a style The fine white porcelain, like that special pellucid purity and soft, in Fig. 275, which is modeled illustrated in Plate LIII, and the exception of faintest rings rims of the neck and of this kind, which may of these two reigns. now appears among the intense deep the Chinese as "sapphire - blue," seen in combina- dragons faintly paste, and usually of the *Ch'ien-lung* derneath the piece, with the same glaze. however, is usually shown in the vase of illustrated in Plate single colors of the tinged by having tication in the glaze, the *yü-tsü wên* or "fish-Chinese. The colored

* The calcined peroxide of iron was formerly painted on, mixed with a simple flux of white lead; now it is combined with the ordinary vitreous flux of the enameler, and acquires the brilliant tint known to the Chinese as *tiao-ra lung*, the "red of the jujube," the fruit of the *Zizyphus communis*

PLATE LX

DECORATED FIGURE OF KUAN YIN.

STATUETTE OF KUAN YIN (Kuan Yin Hsiang), 17 inches high, mounted upon a pedestal, representing the Chinese goddess of Mercy, a Buddhist deity, the special "bearer of prayers" as the name signifies.

Modelled in a dignified pose, she stands upright with benighted hands crossed in front, her robes, with broad and loose sleeves, hanging gracefully down so as to cover all but the tips of her bare feet. The face, with calm, complacent features, is marked between the eyebrows with the illuminating urn, characteristic mark of a Buddha, and the ears have the traditional pendulous lobes of a Buddhist saint. The hair is crowned with a tiara of lotus design, a lotus-flower is suspended upon the breast by a jeweled necklace, and another hangs down from the girdle. A short broadened cloak covers the shoulders and forms a hood, which projects forward in a point above the head-dress.

The pedestal is fashioned in scrolled outlines to represent the waves of the sea, with the two-headed, breathing head of a dragon emerging in front, flanked by two four-clawed feet, the hinder part of its serpentine form being seen behind.

The figure is enameled with a crackled glaze of soft grayish tone with reticulating brown lines. The decorated parts are painted in the brilliant colors of the old famille verte; the hair is jet-black, the eyebrows are outlined in black, and the lips touched with coral-red. The hood is broadened with scrolls of lotus-flowers; the upper border of the robe is encircled by shou characters alternating with flowers.

Period Kang-hsi (1662-1722)



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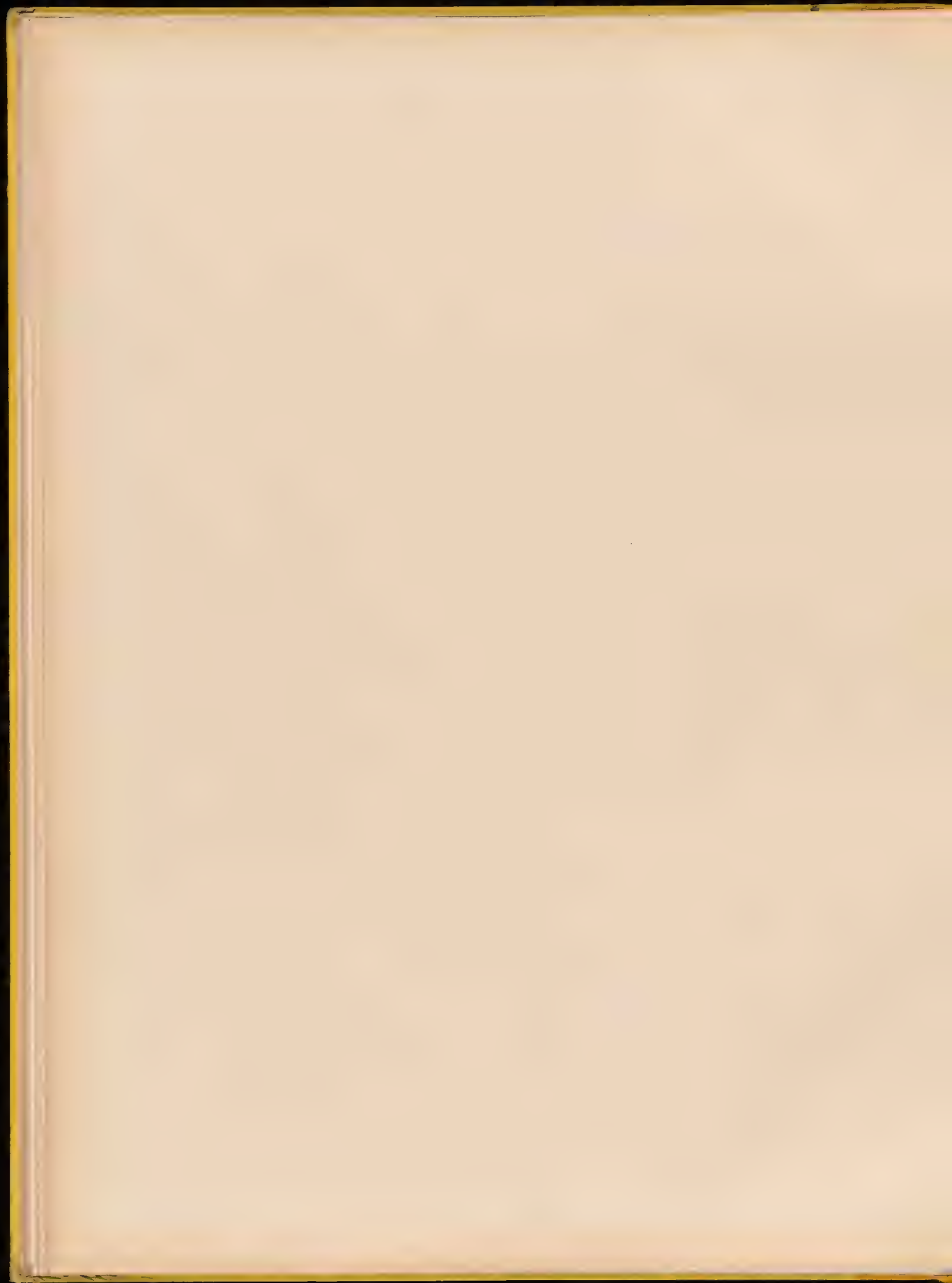
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The finely crackled green and yellow monochromes of the same class, which are usually bracketed together, are characteristic colors of the period, the production of which is continued down to the present day. Of the "fish-roe green," or *yü-tsü lü*, a typical specimen is seen illustrated in Plate XXVII; this is also called by the Chinese *kua-p'i lü*, or "cucumber-green," a name more appropriate to the color of the vase illustrated in Plate LXXVIII; it is sometimes called "apple-green" by Western collectors, but this term (*p'ing-kuo lü*) is always applied by the Chinese to the green which accompanies their *p'ing-kuo huang*, or "apple-red," on the "peach-bloom" vases of the K'ang-hsi period. The yellow crackle of the same type, called *yü-tsü huang*, or "fish-roe yellow," is illustrated in Plate LXXVII; under the name of "mustard-yellow," which indicates its usual shade, it acquired at one time a celebrity which it hardly deserved.

The ordinary crackle of the time, marked by the wider reticulation of lines, which is likened to fissured ice, and hence known by the name of *p'ing lich wen*, is sufficiently illustrated by the vase of archaic design shown in Plate LXXVII, which is coated with the grayish-blue glaze called *fu yü*, from its resemblance in color to that of the ancient Ju-chou porcelain, after which it was modeled; it is marked underneath in blue with the date-mark of Ch'ien-lung. Crackled glazes were among the specialties of the period, and were produced at will in any color or combination of colors. The variety of *soufflé* glazes was also very great, and many novel combinations were introduced by the application of a different shade of the same color, or of a new color altogether. The second enamel was sprinkled on in the form of a fine rain by blowing through a bamboo tube with gauze tied over the end, which was lightly dipped in the color, or it was flecked on in larger or smaller tears with a brush dipped in the moist color; or, again, it was painted on in larger patches of overglaze enamel; the effect of each process can be readily distinguished, so that a fuller description is unnecessary.

The decorated porcelain produced during this long reign of sixty years is also of almost infinite variety. If it wants something of the artistic freedom of design and brilliancy of coloring which distinguish the K'ang-hsi period, it evinces a grace and technical finish of its own. Brilliant greens of different shades predominate in the painted porcelain of the latter reign, which is indicated by the selection for it of the name of *famille verte*. In the new reign the green is paler in tone and occupies a subordinate position among the colors; it is supplanted by reds of crimson and pink shades derived from gold, hence the name of *famille rose* which is often applied to the decoration.

The decorated porcelains may be conveniently classified under the headings of the table in Chapter X:

- A. Colors of the *grand feu*.
- B. Colors of the *demi-grand feu*.
- C. Colors of the muffle stove.

We shall find that the eight classes which were comprised in the table under the above three headings are all abundantly represented in the productions of the reign of Ch'ien-lung.

There is nothing special to be noticed in the first two classes which include the pieces painted in cobalt-blue and in copper-red respectively. The blue and white is generally carefully penciled with graceful floral sprays and conventional scrolls, but the blue has lost its pulsating vigor, and the glaze its pellucid depth. The white ground is purer in tint, but it is apt to be-



FIG. 280.—Octagonal. Lower pot decorated in p'ao-tsü with flowers, fruit, and butterflies painted in enamel colors.

come almost chalky, and one misses the tinge of blue which seemed to give a note of harmony to the older pictures. Mr. Monkhouse in his appreciative introduction to the catalogue of blue and white, already referred to, asks: "Does this tinge come from the pigment with which the vase is painted? If so, it is, perhaps, one advantage of the Chinese practice of baking the paste, the blue and the glaze, at the same firing. The tinge, whether gray or blue, is always in accord with the quality of the blue."

A typical example of blue and white, with the seal of *Ch'ien-lung* inscribed underneath, may be seen in the ritual wine-pot with Buddhist symbols and floral scrolls in Fig. 90. The



FIG. 287.—Snuff bottle with brilliant decoration on deep red ground; mark, *Ch'ien-lung*.

two pieces now to be mentioned are decorated in mixed underglaze colors, and belong, therefore, to the third class on the table. The pilgrim-bottle (*pao yueh p'ing*) in Fig. 176, outlined in the shape of the full moon, is decorated on each side with a five-clawed imperial dragon coiling round the magic jewel. The dragons, the flames proceeding from their bodies, and the effulgent jewels in the middle, are painted in copper-red of maroon tint; the scrolled clouds which fill in the intervals and the crested sea-waves at the base of the vase are painted in cobalt-blue. The outside of each loop-handle is decorated in blue with a spiral scroll, and the seal of the *Ch'ien-lung* period underneath is penciled in the same underglaze color. The smaller bottle-shaped vase in Fig. 276 is an example of the so-called "soft-paste" class, decorated in the same two colors as the last piece. The crackled (*k'ai-pien*) glaze, which has a slightly undulatory surface, is traversed throughout with a reticulation of fine lines. The monstrous lionlike quadruped, drawn after the unusually grotesque fashion of this time, is standing at the foot of a spreading pine-tree, with a bat flying overhead, all painted in blues of subdued tones; the flames which proceed from the shoulders and hips of the monster are tinged copper-red, and its eyes are lightly touched with rings of the same underglaze color. There is no mark attached.

A representative piece of the fourth class, "decorated in glazes of several colors," is illustrated in Plate XXXI in the magnificent vase, two feet high, decorated with imperial dragons in the midst of clouds, with the details engraved in the paste and enameled green, displayed upon a monochrome yellow ground.

The remaining four classes, including all the different kinds of decoration in enamel colors fired in the muffle stove, are particularly well filled. In the reign of *Ch'ien-lung*, according to Chinese authorities, the highest art was lavished on porcelain-painting in colors, and the dealers thronged round the mouth of the kiln to have the first pick of the things as they were taken out. The "red shops," as the manufactories of colored ware had been commonly called since the introduction of the coral-red derived from iron, one of the earliest of the enamel colors, were now widely patronized, instead of those of the producers of single colors and the decorators in plain blue and white, who had hitherto monopolized attention. The three beautiful specimens selected for illustration in colors are unrivaled examples of the style and coloring of the time. The first, Plate LXIV, is one of a pair of quadrangular vases, with openwork railings projecting from the corners, which are richly decorated in colors with gilding. The large panels are painted with landscape pictures of the four seasons, bordered by scrolls, penciled in gold on a soft coral-red, by bands of gold-brocaded blue or embroidered yellow. The study of the colors on a vase of this kind, of which the date is certainly known, is an invaluable aid to the correct classification of the enameled single colors which are so often unmarked. The second vase, Plate LXXVI, is a typical member of the *famille rose*, exhibiting broad bands of crimson *rouge d'or* etched with



FIG. 282.—*Ch'ien-lung* Eggshell Vase with pencil pictures and floral reliefs, painted in enamel colors, with gilding.

scrolls. Like the foregoing vase the base is enameled pale green underneath, a characteristic of the finest decorated porcelain of this reign which is worthy of notice. The mark is written here in bright overglaze blue, in one horizontal line; in the former case it is in the form of a seal, penciled in red on a white panel reserved in the middle of the pale-green ground. The third of the *Ch'ien-lung* pieces, the hexagonal lantern with pierced openwork sides in Plate XXII, is another striking evidence in its soft, harmonious tone of coloring, in its graceful decorative designs, and in its finished technique, of the artistic skill of the potters of this period.

It is possible to admire the fine productions of this time, and yet to prefer the bolder style and stronger coloring of the decorated porcelain, as well as the brilliancy of the monochromes of the older reign of *K'ang-hsi*. M. Grandier, a practiced connoisseur of Chinese ceramic art, observes: "Some collectors prefer the delicate porcelains of the *Ch'ien-lung* epoch to any other; I can find no fault with them; others the presence of the most perfect of artistically attracted by the porcelain of barbaric effect; these last are not. Some, again, put in the first rank the and they are right. I exclude none special qualities of a different order, out admitting the superiority of any always the gift of captivating me, the world, it reigns an absolute

There is no fixed line of de- porcelain of the *Yung-ch'eng* and in form and design as well as in pass for productions of the for- of *Ch'ien-lung* inscribed under- the first case, penciled in cobalt- bowl-shaped vase in Fig. 277 in peony flowers etched under the design, coiled in openwork relief dish brown and touched with Fig. 249 is painted in the same illustrated in Plate XLVIII, with from the circular rim of the foot

the dish to decorate its interior, as well as its outer surface. The branches bear pink flowers and buds, as well as large peaches, the fruit of long life, and they are accompanied by five flying bats, painted in shaded red, emblems of the five happinesses, three being displayed in the field, two on the outer edge of the saucer. In Fig. 278 is exhibited a charming little vase, modeled as a four-sided beaker (*tsun*), of ancient bronze design, with an archaic scrolled band round the waist, and vertical dentated ridges projecting from the sides and corners; upon it are seen the lizardlike forms of nine dragons, in undercut relief, painted in delicate *Ch'ien-lung* colors, of which a large *Ch'ih-lung*, with four small ones crawling over its body, composes the handle, while four others coil round the neck of the vase.

Two other pieces will serve to give an idea of the great variety of flowers depicted in the naturalistic floral decoration of porcelain at this time. The flower-pot of eight-lobed form in Fig. 280 has eight panels of flowers and fruit, with butterflies and dragonflies, all painted in delicate enamel colors. The front panel displays the fir, bamboo, and prunus, so often associated as emblems of longevity; the next, proceeding from right to left, contains flowering bulbs of narcissus and sprays of roses, followed in order by pomegranates and chrysanthemums; a group of begonias; of hibiscus (*Rosa sinensis*) branches; sprays of *Dielytra spectabilis* and azure-tipped marguerite daisies; of yellow jasmine and scarlet *ling-chih* (*Polyporus lucidus*); of red-leaved amaranthus and orchids (*Cymbidium ensifolium*). The large double gourd-shaped vase

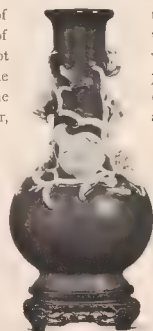


FIG. 283.—Vase of dark olive-green "tea-dust" tint, with a branch of pomegranate winding round in full undercut white relief; mark, Ch'ien-lung

remain cold, dull, and indifferent in these marvels, and are only enthusiastic the *Ming* dynasty, so majestic in its wrong, and I offer them my approval productions of the time of *K'ang-hsi*, of these three periods; each has its and I admire them all sincerely with- one over the others. Beauty has and under all its forms; queen of sovereign in the realm of art." marcation between the decorated *Ch'ien-lung* periods. Two pieces, smaller technical details, might mer reign had they not the mark neath, etched under the glaze in blue in the second. The oval white with scrolls of lotus and clear glaze; the dragon of archaic round the rim, is enameled red-gold. The saucer-shaped dish in brilliant enamels as the large dish branches of peaches springing and passing over the border of

The branches bear pink flowers and buds, as well as large peaches, the fruit of long life, and they are accompanied by five flying bats, painted in shaded red, emblems of the five happinesses, three being displayed in the field, two on the outer edge of the saucer. In Fig. 278 is exhibited a charming little vase, modeled as a four-sided beaker (*tsun*), of ancient bronze design, with an archaic scrolled band round the waist, and vertical dentated ridges projecting from the sides and corners; upon it are seen the lizardlike forms of nine dragons, in undercut relief, painted in delicate *Ch'ien-lung* colors, of which a large *Ch'ih-lung*, with four small ones crawling over its body, composes the handle, while four others coil round the neck of the vase.

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(*hu-lu ping*), nearly two feet high, in Fig. 279, displays in its rich floral ground the "hundred flowers" of the Chinese, painted in natural colors, so that each species may be recognized at a glance by one familiar with the garden flora of China. Among them may be distinguished peonies of several kinds, lotus, chrysanthemum, magnolia, roses, hibiscus (both pink and yellow), orchids, iris, lilies (scarlet and white), asters, hydrangea, wistaria, dielytra, pomegranate, begonia, narcissus, convolvulus, syringa (white and lilac), *Pyrus japonica* (*hai-t'ang*) and double peach, *Olea fragrans*, cockscomb, etc. The foot is encircled by a band of formal foliations in shaded

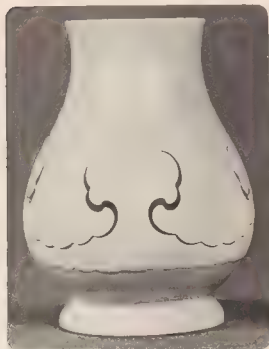


FIG. 284. Articulated Celedon Vase with archaic designs in relief under the glaze of pale shaded pea-green, mats, Ch'ien-lung.

blue and green upon a pink monochrome ground, between heavily gilded rims. The base enameled, like the inside of the mouth, pale green, has a reserved panel in the middle in which is penciled in red the seal *Ta ch'ing Ch'ien lung nien chih*—i. e., "Made in the reign of *Ch'ien-lung*, of the great *Ch'ing* [dynasty]."*

The varied processes of decoration in white slip over colored glazes; of embossing in plain, and in undercut relief; of pierced designs, intended either to be left in openwork or to be subsequently filled in with glaze; and of making composite vases, composed either of articulated pieces or furnished with movable appendages—all these branches of the ceramic art were executed with success at this time, and some examples have been already illustrated in these pages. The vase in Fig. 282 displays the floral embossed work which was so exactly copied at Meissen in early Dresden porcelain that it is, at first sight, difficult to distinguish the copies from the originals, as they are now placed side by side for comparison within the glass cases of the museum at

Dresden. It is an ovoid vase of fine eggshell texture, overlaid with a close-set floral decoration composed of chrysanthemums, *hai-t'ang* (*Pyrus japonica*), and daisies, painted in red, green, and gold. Within this floral ground are reserved two oval panels, painted in delicate enamels with familiar scenes of domestic life, an interior with ladies drinking wine out of tiny gilded cups, and a garden with another group of ladies looking at fighting cocks; scrolled bands penciled in gold round the rims of the vase complete the decoration. The vase in Fig. 283 exhibits a floral decoration in full undercut relief projecting from a background of "tea-dust," or *ch'a-yeh mo*. The "tea-dust" is one of the characteristic *soufflé* glazes of the time, an olive-green monochrome ground thickly flecked with tiny spots of lighter green. The vase, grooved with three vertical lines, has an indented foot and a three-lobed lip. The branches of fruit in white relief are pomegranates, winding round the vase and leaving a small interval on the shoulder, which is filled by a branched stem of sacred fungus (*Polyporus lucidus*) which is also enameled white. The foot, coated underneath with the same "tea-dust" glaze, has the seal, stamped in the paste, *Ta Ch'ing Ch'ien lung nien chih*—i. e., "Made in the reign of *Ch'ien-lung*, of the great *Ch'ing* [dynasty]."

No better examples of pierced work could be found than the lantern with openwork panels, which is illustrated in Plate XXII, and the magnificent vase with pierced trellis-work

* A magnificent jar (*huan*) forty-five centimetres high, of broad, massive form, illustrated by M. Granddier (*loc. cit.*, Plate XXXVI, 109), is covered with the same floral decoration. The author describes it as "composed of an interlacement of floral sprays in juxtaposition presenting an infinite variety of types and of colors; the Chinese flora is represented upon it with an incredible luxury. It produces the effect of an immense sheaf of flowers—of a colossal bouquet. (From the Summer Palace)" The cover is apparently wanting. Its fellow, which is in the Dana Collection in New York, is, if I remember rightly, complete with the original cover decorated with the same floral ground crowned with a gilded knob.

PLATE LXI

TALL TRIPLE GOURD VASE

TALL VASE (Ha-lu Ping),
25 inches high, of threefold
outline, fashioned in the form
of a double gourd with broad, vaulted
waist, and decorated in enameled colors
of the K'ang-ni period (1662-1722)

The middle section is decorated on
a white ground with two grotesque
lions enveloped in flames, and brocade
balls, looking like wheels, surrounded
by swirling fillets. The balls, outlined
in underglaze blue, are painted, partly
in the same blue, partly in colors, coral-
red and green predominating; the
lions, painted in similar colors, have
the curly manes and spreading tails
touched with an overglaze blue enamel.
The borders are filled in with a band
of floral diaper in colors.

The upper and lower segments of
the vase are glazed with a monochrome
ground of brilliant "mirrored black."
This was once profusely painted in
gold, and traces remain on the lower
part of the vase of floral and diapered
grounds, enclosing panels containing
rich scenes with deer, K'lin, and
monstrous quadrupeds, surmounted by
a ring of symbols, including the double
fish, lotuses, and "cash"; and of
panels containing landscapes with tem-
ples on the upper segment.

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in the outer casing that is shown in Fig. 185. This last is also provided with a movable appendage in the form of a revolving belt attached to the waist of the double gourd; it is marked underneath with a gold "seal" of the *Ch'ien-lung* period. An articulated specimen is presented in Fig. 284, which represents a celadon vase of bronze form and design, cut across into two parts by a wavy, dovetailed line of four-lobed foliated outline. The designs, worked in relief in the paste, in a broad band encircling the body of the vase, consist of four monstrous ogre (*l'ao-t'ieh*) faces, conventionalized into ornamental scrolls. The varying depth of the investing glaze produces corresponding shades in soft tones of pea-green. The seal of *Ta Ch'ing Ch'ien lung nien ch'ih*, "Made in the reign of *Ch'ien-lung*, of the great *Ch'ing* [dynasty]," is penciled on the foot in cobalt-blue underneath a coat of the same celadon glaze.

The last technical process of decoration to be noticed here is that in which the pierced designs cut in the porcelain are filled in with glaze, producing a charming effect when the piece is looked at as a transparency. This is sometimes known as "rice-grain" decoration. It may either form the sole ornamentation of a piece or be employed in combination either with blue and white or with colored enamels, a few leaves or petals in the latter case, for example, being treated in this way so as to appear transparent when held up to the light. The most usual form is that of bands of diaper or star pattern. The delicate bowls of this reign which display an intricate conventional pattern, like that of lacework, contrasting in its greenish transparency with the pure white ground, are among the most graceful and charming of ceramic triumphs; they are called "lace-bowls" by collectors, and have a tiny seal mark of the reign penciled underneath in blue. Still rarer are vases of which we have one for illustration in Fig. 285, the sides of which are pierced throughout with a lacework pattern of conventional peony-flowers in the midst of leafy scrolls, and which has the pierced floral pattern filled in with glaze. The structure of the vase is of eggshell thinness and undulatory surface, and the decoration imparts a marvelous lightness of effect. The borders of the vase are encircled by rings of conventional ornament molded in slight relief, so as to be picked out in white on a ground of palest celadon tint. There is no mark inscribed, but it could hardly belong to any other epoch, and its peculiar delicacy and beauty make it a fitting type to close this brief sketch of the ceramic art of the reign of *Ch'ien-lung*, the chief charm of which lies in these two qualities.



FIG. 285.—Ch'ien-lung "Lace-work" Vase of egg-shell texture, the sides pierced with scrolled designs, being filled in with transparent glaze



FIG. 286. Snuff-bottle; two double gourds with decoration in brilliant enamels on yellow ground, mark, Ch'ien-lung.

CHAPTER XV.

THE TWENTY ILLUSTRATIONS OF THE MANUFACTURE OF PORCELAIN DESCRIBED BY T'ANG YING.

T'ANG YING, the celebrated director of the imperial porcelain manufactory at Ching-tê-chên, to whom we have already so often referred, came up to Peking in the eighth year of the reign of the Emperor *Ch'ien-lung* (1743). He had been absent for fifteen years, engaged in superintending the ceramic works, and was sent for now by the emperor, who was anxious for personal information about the details of the industry from a professor of the art. On the twenty-second day of the fourth intercalary month he was summoned to the Office of the Board of Works in the Yang-hsin-tien, one of the large halls of the imperial palace, to take part as a member of a commission which had been especially appointed for the purpose of revising some of the classical works on technical subjects. When he arrived there a series of twenty illustrations of the manufacture of porcelain, which had been found in the imperial library, were handed to him, together with an imperial rescript, dated the eighth day of the preceding month, ordering him (T'ang Ying) "to arrange the illustrations in their proper order, processes illustrated in the water-color the porcelain earth was obtained, as materials; and finally to return the he had written attached, to the

The task was completed in "reverentially submitted to the a memorial by T'ang Ying, who retary of the Imperial Household of the Customs at Kiukiang, and Porcelain Manufactory." The picture since, and have never, so Their description by T'ang Ying, either in its complete form or in of any pretensions on ceramics. ing copies of the original imperial morial announcing the comple- the chapter on porcelain in the on the apparatus of the library," lished in the reign of *Ch'ien-lung*. be found in the official annals of *hsi T'ung chih*, book xciii, folio 19-23), where it is published as an appendix to the article on porcelain.

There is, unfortunately, no word of the date of the pictures themselves; it is only stated that they were painted by order of the emperor, but of which particular emperor we are not informed. We know that the Emperor *K'ang-hsi* had two series of pictures painted to illus-



FIG. 287. Eggshell Vase, delicately painted in colored enamels and gold, with illustrations of silk culture and weaving.

and to describe carefully the different pictures, specifying the hills from which well as the sources of the other m- pictures, with the descriptions which imperial library."

twelve days, and the result was imperial glance for correction" in subscribes himself as "Junior Sec- (Nei Wu Fu), Tao-tai in charge *ex-officio* Director of the Imperial tures have remained in seclusion far as I know, been published. on the contrary, is to be found abstract in every Chinese book The most complete form, includ- decree and of T'ang Ying's m- tion of his task, is contained in *Wên fang ssü k'ao*, "Researches by T'ang Ping-chün, a book pub- The most authentic version is to the province of Kiangsi (*Chuang*

trate the different processes of rice-cultivation and silk-weaving, which were published, with imperial odes attached, in the thirty-fifth year of his reign (1696), under the title of *Yü chih K'eng chih T'ou*. Each series consists of twenty-three pictures, ending with the worship of the patron deities, and the form resembles that of the *T'ao Yeh T'ou*, the "Illustrations of the Manufacture of Porcelain," which would seem to have been designed after their model. Ordinary albums of pictures of the different processes in the preparation of tea, silk, and porcelain are common enough, but these, which have generally been painted at Canton for foreigners, come under a different category.

There is a beautiful eggshell vase in the collection, shown in Fig 287, decorated in the delicate enamel colors with gilding of the *Ch'ien-lung* period, which displays in detail the various processes of the cultivation of silk in China. The different steps are exhibited in a succession of scenes with groups of busy women and children represented as gathered either in the interior of houses of elaborate design or in courtyards filled with flowering trees and palms; from the hatching of the tiny eggs, the feeding of the worms in every stage of their growth, in the open baskets ranged on curtained bamboo shelves, with mulberry-leaves, to the winding of the silk from the chrysalides, and the weaving of the spun material in looms of complicated structure. In the first scene a boy is bringing baskets of mulberry-leaves slung from a pole on his shoulder; in the last scene a second is seated at the large hand-loom. A wreath of red and pink roses underneath the upper rim, which is gilded, completes the decorations of the vase.

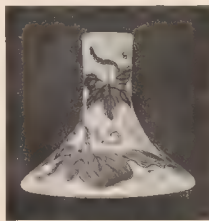


FIG. 287. SILK-CULTURE. A. Gilded enamel of the *Ch'ien-lung* period.

With regard to the series of twenty illustrations of the manufacture of porcelain, T'ang Ying in his memorial observes that they are not enough to give a complete picture of all the different technical processes, and that still less must an exhaustive account of the ceramic industry be expected in his notes, which are intended only to be descriptive of the illustrations. As far as they go, however, they form a sketch of the art from the hand of a master, which is translated in this chapter as literally as possible, with the addition of a few explanatory notes at the end of each section.

Illustration No. 1: "MINING FOR THE STONE AND PREPARATION OF THE PASTE."

"In the manufacture of porcelain the body is formed of molded earth. This earth is prepared from stone which must be mined and purified for the purpose. The stone is found in the province of Kiangnan, within the prefecture Hui-chou Fu, at Ch'i-mên-hsien, which is two hundred li distant from the porcelain manufactory. The two mountains called Ping-ii and K'u-k'ou, in this district, both produce the white stone. It is obtained by mining, and when broken exhibits black veins branching like the deer's-horn seaweed. The natives take advantage of the mountain torrents to erect wheels provided with crushers. Having been finely pulverized, it is then purified by washing and levigation, and made up in the form of bricks, which are called *pai-tun* or 'white bricks' (*petuntse*). When the color is uniform, and the texture perfectly fine, it is used for the making of the round pieces and vases of eggshell and of pure white porcelain, and of similar objects decorated in blue.

"Besides this there are several other kinds of earth called Kao-ling, Yü-hung, and Ch'ien-t'an, after their different places of production, which are all situated in the province of Kiangsi, within the bounds of the prefecture Jao-chou Fu. They are dug out and prepared in the same way as the *petuntse*, and can only be used for mixing with this last, or in the making of coarser and thicker ware.

"The picture shows the different processes of mining, of pounding, and of washing, which are comprised in the heading, 'Mining for the stone and preparation of the paste,' and it is not necessary to describe them more fully."

Porcelain consists essentially of two elements—viz., the white clay, or *kaolin*, the unctuous and infusible element, which gives plasticity to the paste, and the feldspathic stone, or *petuntse*, which is fusible at a high temperature, and gives transparency to the porcelain. The feldspathic stone from Ch'i-mên-hsien, alluded to above, has been chemically analyzed by Ebelmen, who describes it as a white rock of slightly grayish tinge, occurring in large fragments, covered with

oxide of manganese in dendrites, and having some crystals of quartz imbedded in the mass. It fused completely into a white enamel under the blowpipe. Applied by immersion upon a piece of Sèvres porcelain, and fired in the large furnace, it produced a very fine glaze.

With regard to the other materials used in the preparation of the paste of Chinese porcelain, which varies very widely in composition, their name is legion. Nearer sources of the feldspathic rock have been discovered in Yü-kan-hsien, and at a place called Hsiao-li, not far south of Fou-liang-hsien, specimens of which have also been analyzed. Another kind of compact tough rock, which is pounded in larger mills, yields a yellow material called *huang-tun*, which is used for coarser ware, but is said to be required for the proper development of the colors of certain glazes.

Illustration No. 2: "WASHING AND PURIFICATION OF THE PASTE."

"In porcelain-making the first requisite is that of washing and purifying the materials of the paste, so as to make it of fine homogeneous texture. The presence of stars (i. e., crystals of mica) or of fragments of stone would cause flaws in the porcelain, foreign bodies or loose paste would lead to cracks.

"The method of purifying the paste is to mix the materials with water in large earthenware jars, and to stir the mixture with wooden prongs, so that it remains suspended in the water while the impurities sink to the bottom. The paste is then passed through a fine horse-hair sieve, and next strained through a bag made of a double layer of silk. It is then poured into a series of earthenware jars, from which the water is run off, and the paste is left to become solidified. A wooden box with no bottom having been placed upon a pile composed of several tiers of new bricks, a large cloth of fine cotton is spread inside, and the solidified paste is poured in, wrapped round with the cloth and pressed with more bricks, which absorb all the water. The prepared paste, freed from the superfluous water, is then thrown on to large stone slabs and worked with iron spades until it has become perfectly compact and ductile, and fit for the manufacture of porcelain.

"All the different kinds of paste are prepared in the same way, the various materials having been mixed in definite proportions according to their different properties. The picture contains in detail the various utensils and the different processes of work comprised in this department of preparation of the paste."

Père d'Entrecolles in his letters gives a more detailed account of the washing of the materials of the paste and the proportions of the ingredients. He says that the finest porcelain is made of equal parts of kaolin and petuntse; that the usual proportion is four parts of kaolin to six of petuntse; and that the least amount of kaolin that can be used is one part to three parts of petuntse. The larger proportion of kaolin gives a greater plasticity to the paste, and enables it to be more readily fashioned on the wheel; it also gives strength to the material when fired, so that it will withstand a higher temperature without softening. For this reason the Chinese call it "the bone," while the feldspar, the more fusible ingredient, which gives translucency to the porcelain, is "the flesh." The hard porcelain of Sèvres and of Germany contain a greater proportion of kaolin, and are consequently more aluminous than any Chinese ware. It is found at Sèvres, however, that it was too hard for the proper development, from a decorative point of view, of the colors, and in 1880 MM. Lauth and Vogt began to make a more siliceous porcelain with a calcareous glaze, attempting to imitate as closely as possible Oriental porcelain. This porcelain, which bears the name at Sèvres of *porcelaine nouvelle*, can be ornamented, like that of China, with glazes of single colors, with *flambés*, with decorations under the glaze in colors of the *grand feu*, as well as in the muffle stove with bright and limpid enamels fixed in relief on the surface of the pieces.*

This new porcelain is composed of:

Kaolin	38 parts.
Feldspar	38 "
Quartz	24 "

It is fired at a temperature of about 1,350° C.; the older hard porcelain at Sèvres is fired at 1,550°; and that of China, according to the recent researches of M. Vogt, at 1,475°.

* *La Porcelaine*, par Georges Vogt

The following table gives the composition of different kinds of porcelain:

Source	Alumina.	Silica	Oxide of Iron.	Potash	Soda	Lime.	Magnesia.	Authority.
Meissen	35.43	60.0	. .	2.26	1.55	0.57	. .	Muller.
Sèvres	34.5	58.0	. .	3.0	. .	4.5	. .	Salvétat.
Vienna (old)	34.2	59.6	0.8	2.0	. .	1.7	1.4	Laurent.
Sèvres, 1880	32.0	60.75	0.8	3.0	. .	4.5	. .	Vogt.
Vienna	31.6	61.5	0.8	2.2	. .	1.8	1.04	Laurent.
Bayeux	30.0	61.6	1.56	3.26	. .	3.56	. .	Salvétat.
Berlin	28.0	66.6	0.7	3.4	. .	0.3	0.6	A. Laurent.
Foëcy (Berry) . . .	28.0	66.2	0.7	5.1	Salvétat.
Limoges	24.0	70.2	0.7	4.3	. .	0.7	0.1	Salvétat.
Sèvres, <i>pâte nouvelle</i> .	22.6	70.83	. .	2.32	2.09	1.1	0.46	Vogt.
Paris	22.0	71.2	0.8	4.5	. .	0.8	. .	Laurent.
China	22.2	70.0	1.3	3.6	2.7	0.8	. .	Salvétat.
Bohemia	21.3	74.78	. .	2.48	0.58	0.64	. .	Muller.
Japan	20.55	70.77	. .	3.99	3.16	0.83	0.18	Vogt.
China	20.7	70.5	0.8	. .	3.9	0.5	0.1	Salvétat.
China	19.3	73.3	2.0	2.5	2.3	0.6	. .	Salvétat.
Nymphenburg . . .	18.4	72.8	2.5	0.65	1.84	3.3	0.3	Vielguth.

Illustration No. 3: "BURNING THE ASHES AND PREPARING THE GLAZE."

"All kinds of porcelain require glaze, and the composition used for glazing can not be prepared without ashes. The ashes for the glaze come from Lo-p'ing-hsien, which is one hundred and forty li to the south of Ching-tê-chên. They are made by burning a gray-colored limestone with ferns piled in alternate layers; the residue, after it has been washed thoroughly with water, forms the ashes for the glaze. The finest kind of petuntse made into a paste with water is added to the liquid glaze ashes, and mixed to form a kind of *puê*, the proportions being varied according to the class of porcelain. Within the large jar, in which the mixture is made, is placed a little iron pot, through the two handles of which a curved stick is passed, to make a ladle for measuring the ingredients. This is called a *p'ên*. For example, ten measures of petuntse paste and one measure of ashes form the glaze for the highest class of porcelain. Seven or eight ladles of paste and two or three ladles of ashes form the glaze for the middle class. If the paste and ashes are mixed in equal proportions, or if the ashes are more than the paste, the glaze is only fit for coarse ware.

"In the picture the little iron pot which is seen floating inside the large jar is the *p'ên*, or 'measure.'"

Specimens of rock from Lo-p'ing-hsien were sent to France by Père Ly, the Chinese Lazarist priest, and examined by M. Salvétat, who describes it as a compact limestone lightly colored by pyrites disseminated throughout the mass. The ashes left after repeated combustion of this rock with ferns are composed mainly of lime, the action of which is to increase the fusibility of the petuntse, the vitrifiable feldspathic rock which gives its peculiar properties to the glaze. This rock is the same that is used in the composition of the porcelain body; only the best pieces are picked out for the glaze, those of uniform greenish tone, which are covered with dendrites in the form of arbor-vitæ leaves. The Chinese call this *Yu-kuo*, "glaze fruit"—i. e., essence of the glaze. A specimen analyzed by Salvétat had the following composition:

Water	2.3
Silica	75.9
Alumina	14.2
Oxide of iron	0.8
Lime	0.5
Oxide of manganese	0.3
Magnesia	a trace
Potash	2.8
Soda	3.2



FIG. 289. — Seuff-bottle; royal blue double gourd.

The analysis of two actual glazes chipped off from pieces of Chinese porcelain by the same authority gave:

Silica	68.0	64.1
Alumina	12.0	10.2
Oxide of iron	a trace	a trace
Lime	14.0	21.0
Potash and soda	6.0	5.1

The glaze of Chinese porcelain is always rich in lime. It is the lime that gives the characteristic tinge of green or blue, but at the same time produces a brilliancy of surface and translucent depth never found in the harder glazes which contain no lime. The glaze of the *nouvelle porcelaine* of Sèvres is prepared with thirty-three per cent of chalk.

Illustration No. 4: "MANUFACTURE OF THE CASES OR SEGARS."

"The porcelain while being fired in the furnace must be kept perfectly clean; a single spot of dirt makes a colored stain. Moreover, the blast of air and fierce flames of the furnace would injure the delicate paste. For these reasons it is necessary to place the porcelain inside the seggars. The clay used in making these cases comes from the village of Li-ch'un, which is on the northeast of Ching-tê-chên. It is of three different colors—black, red, and white. A kind of blackish-yellow sand, which is found at Pao-shih-shan, is mixed with the clay to form the paste, so that it may be more readily fired. The cases are fashioned on a wheel, which is similar to the wheel used for porcelain. The paste need not be finely levigated. After the cases have been partially dried they are roughly finished off with the knife, put into the furnace, and fired for the first time empty. When baked and ready for use, they are called by the name of *tu-kia*, or 'finished cases.'

"The workmen who manufacture the seggars are accustomed with the same coarse paste to make, on the same wheel, a supply of earthenware bowls for the daily use of the potters in their native hamlets."

The seggars are made of a common yellow ferruginous clay, which darkens to a brick-red tint when fired. They are in the form of circular trays about six inches high, fitting one upon the other, so as to form the columns seven feet in height, which are ranged inside the large furnace. Intervals to allow free play of the flames are left between the piles. The lower cases, which are partially imbedded in the gravel floor of the furnace, are left empty. The bottom of each tray forms the cover of the case below, only the top case having a cover of its own. If the pieces of porcelain are too high for the case, one or more circular rings of the same size as the trays are substituted, by which means the height of the seggar can be increased indefinitely. In early times, as we saw in the descriptions of the *Ming* dynasty, they had special kilns for firing the seggars; now they are fired empty, together with the older cases which are charged with porcelain in the usual way, the new ones being placed in the middle of the columns. A supply of flat disks (*rondeaux*) made of biscuit porcelain, or of fire-clay, is provided as supports for the pieces of porcelain, which are prevented from adhering to the disks by dusting them over with kaolin.

Illustration No. 5: "PREPARATION OF THE MOLDS FOR THE ROUND WARE."

"In the manufacture of the round ware each several piece has to be repeated hundreds or thousands of times: without molds it would be most difficult to make the pieces all exactly alike. The molds must be made in accordance with the original design, but the size can not be so precisely measured; they must be larger than the model, otherwise the piece will come out smaller than the pattern. The raw paste, which is expanded and loose in texture, becomes during the process of firing contracted and solidified to about seven or eight tenths of its original size, a result following from the natural laws of physics. The proper proportionate size of the unbaked piece is fixed by the mold, and therefore the molders use the term 'prepare' (*tsai*) instead of 'make' (*tsao*). Each piece must have several molds prepared, and the size and pattern of the contents when taken out of the kiln must be exactly alike. A good practical knowledge of the length of firing required and of the natural properties of the paste is necessary before it is possible to estimate the exact amount of shrinkage, so as to fashion the molds of the proper form. In the whole district of Ching-tê-chên there are only three or four workmen reputed clever at this special handiwork."

The term "round ware," or *yuan-ch'i*, is a general term applied by Chinese potters to all the different kinds of porcelain articles in ordinary use, such as dishes (*pan*), bowls (*wan*), cups (*chung*), and platters (*tiêh*). They are first "thrown" on the wheel, the wheels being of two sizes, managed by different classes of workmen. After having been fashioned on the wheel, they are given to the molders to be pressed in the molds referred to above, which are of rounded form

PLATE LXII

BLUE AND WHITE VASE
HUA CHU JAS.

FLOWER-VASE (Hua Ping), 10 1/2 inches high, of the reign of K'ang-hsi (1662-1722), decorated in panels with cobalt-blue of brilliant mottled tone, and in the intervals with floral sprays on an enamelled black ground.

The body of the vase is decorated with three quatrefoil panels containing vases filled with bouquets of lotus-flowers and reeds, pots of sword-grass, and writing apparatus set on low tables; the neck, with two leaf-shaped panels below, having sprays of chrysanthemum inside, with alternate swastika and jewel symbols round the bulb, and with rings of formal foliations round the base and rim.

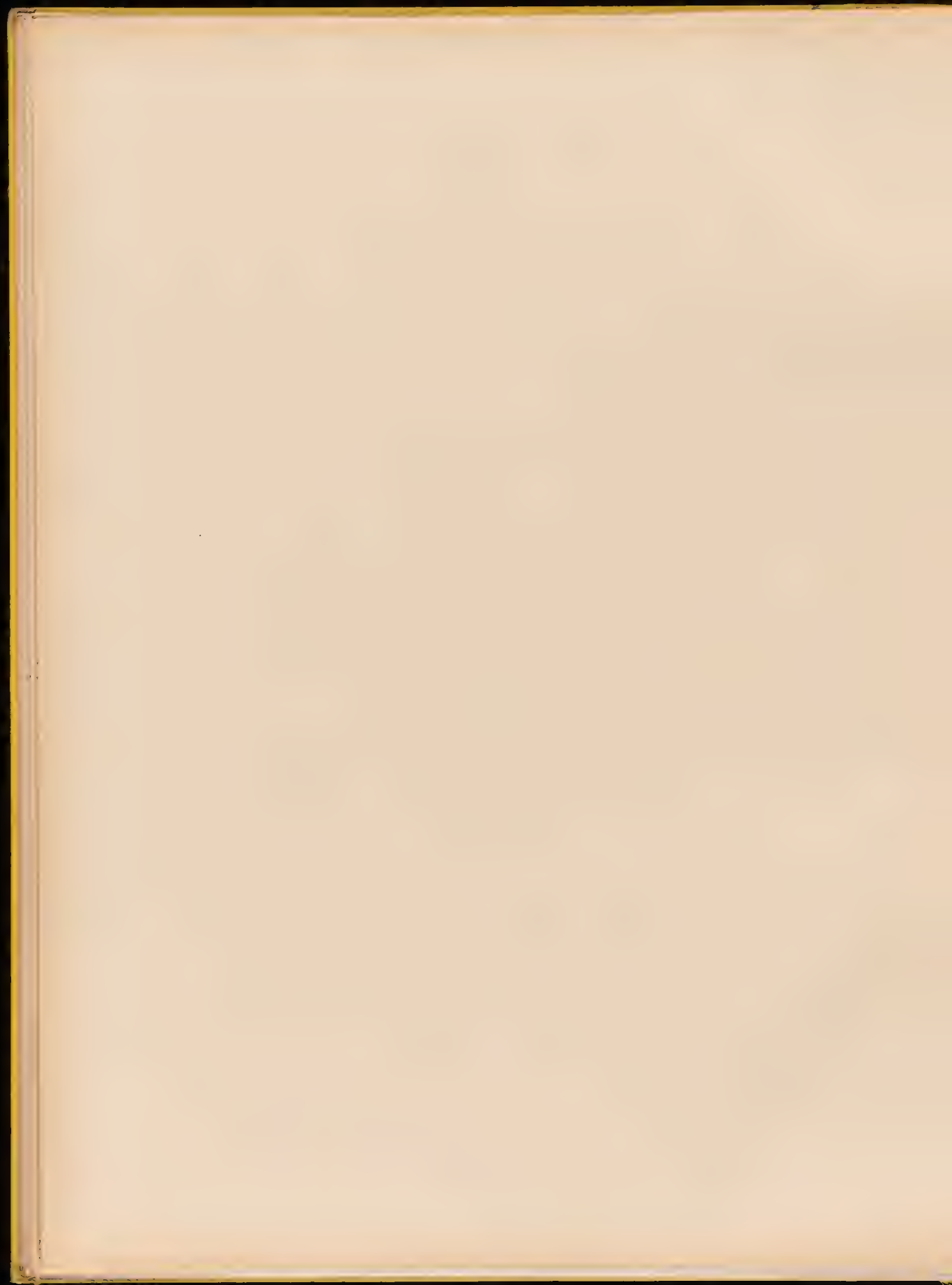
The ground between the panels is filled in with sprays of plum-blossom, painted in delicate green and yellow, relieved by a background of intense iridescent black.

* There is no mark underneath.



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externally, and are composed of two parts, the outside of the piece being molded in the one, and the interior by the other, which is called technically the "core." The use of the mold by Chinese potters can be traced back to very early times. The *K'ao kung chi*, a technical work of the *Chou* dynasty (B. C. 1122-249), which has been already referred to, distinguishes the ordinary potters (*T'ao jên*), who worked with the wheel, from the molders (*Fang jên*), who made the round, tazza-shaped sacrificial dishes called *tou* and the oblong bowls for meat offerings called *kuei*. The *Lun Hêng*, a critical book of the *Han* dynasty by Wang Ch'ung, who lived A. D. 19-90, refers to the molds used by potters of that time under the name of *kuei-tien*: "The potters make molds of earth which fix the size of the pieces so that they can not be enlarged or diminished afterward; correct estimates of the sizes required must be made beforehand, as they are changed during baking."

Illustration No. 6: "FASHIONING THE ROUND WARE ON THE WHEEL."

"There are several different processes of work in the manufacture of this round ware. The square, polygonal, and ribbed pieces, and those with projecting corners, have to be carved, engraved, molded, and finished with the polishing knife, all of which are different branches of work. The plain round pieces are turned on the wheel, being distributed according to their size between two classes of workmen. The first take the large pieces and fashion the round dishes (*pan*), the bowls (*wan*), the cups (*chung*), and the saucer-plates (*ts'ih*), from one up to two or three feet in diameter; the second make on the wheel the same kind of pieces which measure less than a foot across. The wheel consists of a disk of wood mounted below upon a perpendicular axle, so as to revolve continuously for a long time, during which the piece must be properly turned, without becoming too thick, too thin, flattened, or otherwise misshapen. There is a carpenter at hand to repair it when necessary.

"Beside the wheel is an attendant workman, who kneads the paste to a proper consistence and puts it on the table. The potter sits upon the border of the framework and turns the wheel with a bamboo staff. While the wheel is spinning round he works the paste with both hands; it follows the hands, lengthening or shortening, contracting or widening, in a succession of shapes. It is in this way that the round ware is fashioned so that it varies not a hair's breadth in size."

The potter's wheel is one of the most ancient instruments of human industry, and the date of its invention is lost in the mists of time. The simplest form is that described above, which is kept in motion by the feet of the workman as he fashions the piece of porcelain with his hands. Just as simple a form is still in use at many manufactories—at Sèvres, for example. In most large factories, however, the wheel is of more elaborate construction, and it is kept in motion by some mechanical means, so that the potter is relieved of a portion of the work. Even in China, as we see in pictures, an assistant is often there, rotating the wheel with a rope passed round it, the ends of which he holds in his hand, or balancing himself by a rope attached to the ceiling while he turns the wheel with his foot. This is the "throwing wheel" by which the soft white clay is fashioned, with the half of the fingers only, into a shape roughly approximating that desired; it is on the polishing wheel, or "jigger," that it is finally "turned" to the exact shape of the model or design.

When the thrower has a piece to fashion on the wheel, he first places on the top a flat disk, which he puts in the middle and moistens with water, and then upon this disk he places the quantity of paste necessary to form the piece, dips his hand into diluted paste or "slip," and puts the apparatus in motion with his feet; then, pressing between his hands the shapeless lump of paste, he raises it, lowers it, makes it into a kind of large lentil, and pierces the lenticular mass with his two thumbs; he lifts it up once more while squeezing the lump between his thumb and fingers into the shape desired. He develops it gradually, keeping it moist all the time with slip, and brings it by degrees to a form which approaches, more or less, that of the perfect piece. The smaller objects are shaped between the thumb and index finger, either of one hand or of both hands. Larger pieces are made by being pressed between the hand and wrist or with the help of a pad or sponge. The workman in this case usually stands, and the size of the pieces that he can make is limited by the length of his arms. If this limit has to be exceeded, he must build up the borders of the cylinder, previously thrown on the wheel, with bits of paste stuck on with slip. The pieces with no mouths and those with very narrow necks are thrown in two halves, which are cemented together with slip.

The precautions to be taken to secure a good result, according to Brongniart, are: 1. The paste must not be too soft; it will be easier to throw, but at the risk of some defect. 2. The workman must have a sure hand and not press unequally on any part of the piece that he is lifting into shape. 3. And specially, it is important that he maintain a perfect accord between the speed of rotation of his wheel and the rate of ascent of his hands, so as to describe a spiral, cylindrical, or conical, in which the steps are the smallest possible. The more plastic and kaolinic the paste the more difficult it is to throw it successfully—not that this paste is harder to throw than a *short* paste, but because any inequalities of molding and pressure are so much more apparent in this than in a thinner paste. The principal defect of a bad throw is 'screwing' (*vissage*). This defect consists of grooves, more or less apparent after firing, which start from the base and rise in spirals like the thread of a screw. These grooves are due to inequalities of the pressure exerted while the piece is in the hands of the workman. If the paste be less plastic, less supple, the pieces to be turned subsequently must be so much the thicker; generally speaking, the thickness of pieces of hard porcelain as they come from the throwing wheel is so great that one can hardly at first sight recognize the form that will be ultimately evolved on the jigger, the turning wheel proper.

Illustration No. 7: "MANUFACTURE OF VASES (*Cho ch'i*)."

"The vases and sacrificial vessels, called *p'ing*, *lei*, *tsun*, and *yi*, are comprised in this general name of *cho ch'i*. The plain round vases are fashioned upon the potter's wheel, in the same manner as the ordinary round ware; they are then dried in the open air and turned on the polishing wheel to be finished with the knife. After the vase has been thus shaped it is washed with a large goat's-hair brush dipped in water, till the surface is perfectly bright and spotlessly clean. After this the glaze is blown on, it is fired in the kiln, and comes out a piece of white porcelain. If painted in cobalt on the paste and then covered with glaze, it is a piece decorated in blue.

"In making the carved polygonal, ribbed, and fluted vases, the paste, wrapped in cotton cloth, is pressed with flat boards into thin slabs, which are cut with a knife into sections. The pieces are joined together by a cement (*barbotine* or slip) made of some of the original paste with water. There is another kind of vase which is made by the process of molding, and which is finished after it is taken from the mold in the same way. The carved polygonal vases and the carved molded vases have to be filled in and washed clean with the brush in the same way as the round vases turned upon the wheel.

"All the varied forms of vases may be engraved with the style, or embossed in relief, or carved in openwork designs, for which purposes, when sufficiently dried, they are given to artificers specially devoted to these several branches of work."

The character *cho*, which means properly "carved jade," is applied in Chinese ceramics to vases generally, which are called *cho ch'i*, in contradistinction to the *yuan ch'i*, or "round pieces," which include the bowls, cups, plates, etc., intended for ordinary use. The *p'ing* was originally a bottle-shaped vase, in which the mouth was less in diameter than the body, but the term is now applied to all kinds of ornamental vases; the *lei* are sacrificial vases with scrolled grounds; the *tsun* are the vases with flaring mouths that we call beaker-shaped, and the *yi* the modern incense urns; the former are modeled after ancient bronze wine-vessels, the latter after the bronze bowls used in olden times for sacrificial offerings of food and corn.

The round (*yuan*) vases are turned upon the wheel, the square (*fang*) vases are made of sections of paste, pressed or molded in various ways, and cemented together by slip. The author of the *Shih wu kan chu*, a miscellany published in 1591, says: "In the manufacture of porcelain it is the square pieces that are the most difficult. They are so difficult because when taken out of the kiln they are so often misshapen or cracked and rarely free from some defect. During their making the corners have to be evenly carved, the fluted parts have to be scooped out with the knife, and the lines of junction of the sections have to be closely cemented; in some unseen corner there may be a want of cohesion, or some slight irregularity, either above or below, in front or behind, to the right or left. Hence the common saying that the square is difficult. The round vases are made at one operation, and follow the movements of the hands, while the wheel does more than half the man's work; not like the square and ribbed vases, which depend wholly upon the manual skill of the artisan."

PLATE LXIII

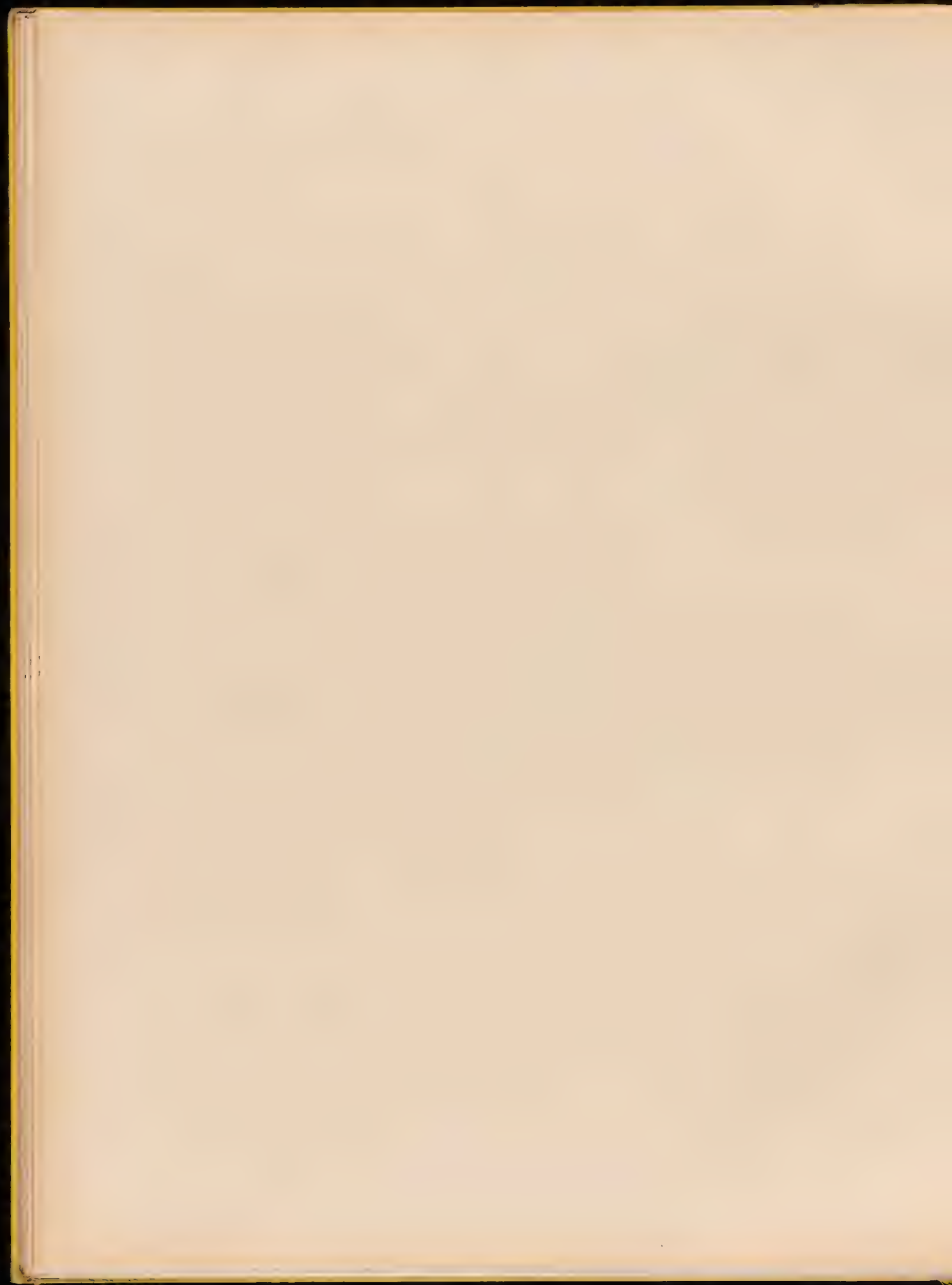
EGGSHELL DISH

SAUCER-SHAPED DISH (Tien), of delicate eggshell porcelain, decorated with brilliant enamel colors of the Yung-ch'ing period (1723-25). The graceful figure, supported by a scatted bank of many colored clouds, represents one of the female deities of the Taoist cult, as shown by her attributes, and seems to be Ho Hsien-ku, the virgin member of the band of immortals who, the story says, occasionally appears to her worshippers in a cloud of diverse colors. The goddess is dressed in long, flowing robes, with a short cloak of lotus-leaves thrown across her shoulders, and a long black scarf with the ends floating loosely down, and has her jet-black hair ornamented with a pink flower, a pilgrim's gourd hangs suspended from her girdle, and she carries in her hands a large blue jar, tied round with pink silk, containing, doubtless, the beverage of immortality—the magic elixir vitae.



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The different branches of work alluded to above are more fully described in the letters of Père d'Entrecolles, translated in Chapter XI.

Illustration No. 8: "COLLECTION OF THE MATERIAL FOR THE BLUE COLOR."

"All kinds of porcelain, whether round ware or vases, that have to be decorated in blue, whether modeled after that of the reigns of *Hsuan-ti*, *Ch'eng-hua*, *Chia-ching*, or *Wan-li*, require this blue color for the painting of their decoration. The deep blue monochrome glaze, *gris bleu*, also requires this blue for its preparation. The material comes from the province of Chekiang, where it is found in several mountains within the prefectures Shao-hsing Fu and Chin-hua Fu. The collectors who go into the hills to dig for it wash away the earth which adheres to it in the water of the mountain streams. The mineral is dark brown in color. The large round pieces furnish the best blue and are called 'best rounds,' distinguished in addition by the name of the place of production. It is brought by merchants to the porcelain manufactory, and is buried by them under the floor of the furnace, roasted for three days, and washed after it is taken out, before it is finally offered for sale, ready for use. The material is also found in different mountains in the provinces of Kiangsi and Kuangtung, but the color produced by these kinds is comparatively pale and thin, and it is unable to support the fire, so that they can be used only in painting coarse ware for sale in the market.

"The picture exhibits only the collection of the material: the processes of preparation and of roasting are not shown."

Blue is the leading decorative color on porcelain, as the learned author of the *T'ao shuo* observes. In the *Chin* dynasty (265-419) blue porcelain was called *p'iao tsü*, resembling in color the pale blue shade (*p'iao*) of certain silks. In the *T'ang* dynasty (618-906) it was called the blue color of distant hills; in the *Chou* dynasty (951-960) the blue of the sky after rain; under the *Wu Yueh* the prohibited color, because it was reserved for the sovereign; afterward, under the *Sung* dynasty (960-1279), although other colors were also used, the *Fu-chow* porcelain was baked with a pale blue glaze; the finest imperial porcelain of the time was starch-blue (*fên-ch'ing*), and the cracked Ko yao and the ordinary Lung-ch'üan porcelain of the time were also of bluish shade.

Abundant specimens of the Chinese mineral have reached Europe. Ebelmen, in his book so often quoted (vol. i, page 385), says that he had specimens of the mineral as it comes from the mine, of the same after it had been roasted in closely luted porcelain crucibles placed under the floor of the furnace, and of the powder produced by grinding the roasted material in mortars. The raw mineral had the form of irregular concretions hollow in the interior, of a deep brown color with a slight shade of green, giving a brownish powder which stained the fingers. Heated in a closed tube it gave off twenty per cent of water, and after prolonged calcination acquired a more pronounced greenish shade. It proved to be a complex mineral of cobaltiferous manganese in the form of oxides, which did not, however, constitute all the mass of the fragments, being associated with a variable quantity, up to nearly half the weight, of silicate of alumina.

The analysis of two specimens gave the following result.

	Raw mineral.	Roasted mineral.
Loss in the fire (water and oxygen)	20.00	4.00
Silica (insoluble residue)	37.46	27.00
Oxide of copper	0.44	2.00
Alumina	4.75	65.00
Oxide of manganese	27.50	
Oxide of cobalt	5.50	
Oxide of iron	1.65	
Lime	0.60	1.00
Magnesia	a trace	a trace
Arsenious acid	a trace	1.00
Oxide of nickel, sulphur	a trace	
	97.90	100.00

The complex structure of the mineral explains the minute precautions taken by the Chinese in selecting the best pieces, and also the infinite variety in the shades of blue obtained after

firing. The larger the proportion of cobalt the purer the blue; a blackish or grayish tint is said to be due to an excess of nickel or iron, a purplish to an excess of manganese. The vigor of the color is due, however, as much to the limpid purity of the white glaze which it has to penetrate, being painted, as it always is, on the raw body of the porcelain. Penciled *sur biscuit* upon Sèvres porcelain, glazed, and fired *au grand feu*, the thinner strokes came out blue, but the deeper parts were sensibly grayish. Its fugitive nature caused the loss of much of the color, as it was fired at a temperature so much higher than that of the Chinese furnace.

Illustration No. 9: "SELECTION OF THE BLUE MATERIAL."

"The blue material, after it has been roasted, must be specially selected, and there is a particular class of workmen whose duty it is to attend to this. The superior kind selected is that which is dark green in color, of rich translucent tint and brilliant aspect. This is used in the imitation of antiques, for the monochrome blue glaze, and for fine porcelain painted in blue. When of the same dark-green color, but wanting somewhat in richness and luster, it is used for the decoration of the coarser porcelain made for sale. The remainder, that has neither luster nor color, is picked out and thrown away.

"When the material has been selected it is ready for use. The method employed is to paint with it upon the piece that has not been fired, to invest the piece afterward with glaze, and then to fire it in the furnace, from which it comes out with the color uniformly transformed into a brilliant blue. If it has not been invested with glaze the color will be black. Should the piece be overfired, the blue of the painted decoration will "run" into the white ground of the piece.

"There is one kind of blue, commonly called 'onion sprouts,' which makes very clearly defined strokes which do not change in the furnace, and this must be selected for fine painting.

"The picture shows baskets filled with boxes of the color, with an ordinary background; there is no actual reference in it to the selection of the color."

The cobaltiferous manganese mineral, which is collected from the hills, where it occurs either on the surface of the ground or at the depth of a few feet, is of very uncertain composition. One portion of the same concretionary piece may be rich in cobalt, while another is quite inert, consisting of silicate of alumina with perhaps a few crystals of quartz. The pieces are generally about the size of the thumb and flattened in shape, and are known commonly by the name of *shih-tsü ch'ing*—i. e., "stone-blue," or "mineral-blue." But the material figures in books under a multitude of synonyms. In the *Sung* dynasty* it was imported from western Asia under the name of *Wu ming yi*—i. e., "nameless rarity"—and there are several specimens of the Chinese mineral under this name in the *Musée d'Histoire Naturelle* at Paris, which were examined by Brongniart. Other names are *T'ao ch'ing*, "ceramic blue"; *Ta ch'ing*, "gros bleu"; *Fo-lou ch'ing*, "Buddha's-head blue"; *Pao-shih-lan*, "sapphire-blue," and a number of other names, with the place of production prefixed; the only difficulty of which is the way they are contracted—*chê liao*, literally "*chê* material," being the form usually found in Chinese books for *chêkiang ch'ing liao*, or "blue material of Chêkiang," the province from which the best is obtained. A name which puzzled me for a long time was *Hun-shui ch'ing*, "turbid-water blue," till I found that it referred to the *purée* prepared by mixing a little of the first-class blue with water that had been employed for painting the ground of a piece with the decoration reserved in white, like the celebrated "hawthorn ginger-pots," with their brilliant mottled grounds of pulsating blue, of which one is so beautifully illustrated in Plate II.

The same mineral is employed in the preparation of the black glazes, for which purpose it need not be so good—that is to say, so rich in cobalt, according to the Chinese. Sometimes the decoration of what was intended to be a blue and white piece will come out of the kiln perfectly black, because the glaze was laid on too thin.

Illustration No. 10: "MOLDING THE PORCELAIN AND GRINDING THE COLOR."

"After the large and small round pieces have been shaped on the wheel, and have been sufficiently dried in the air, they are put into the molds which have been previously prepared, and are pressed gently with the hands, until the paste becomes of regular form and uniform thickness. The piece is then taken out and dried in a shady place

* Cf. *Chinese Porcelain before the Present Dynasty*, by S. W. Bushell (page 52)

PLATE LXIV

CH'EN-LUNG VASE OF THE FOUR SEASONS.

QUADRANGULAR VASE (Yang P'ang), 13 inches high, with vertical openwork railings of scrolled outline projecting from the four corners, richly decorated in enamel colors, with gilding, of the Ch'ien-lung period (1735-95).

The vase is decorated with foliated panels framed in a blue ground brocaded with bats in gold. The large oblong panels on the body are painted on a white ground with landscape pictures of the four seasons. The picture representing spring is a mountain scene, with temples half hidden by trees, and a river spanned by a plank bridge on which a traveler is standing, admiring the peach-trees with their pink blossoms; a *Pyrus japonica* is flowering near a temple, and the willows on the river-bank are clad in the rich verdure of spring. The summer scene is a similar picture, with pines and poplars in full foliage and reeds waving over the water. The picture of autumn, seen in the illustration, has also a mountain background, with temples and pillared pavilions on the shore of a river swollen by the torrents of the rainy season, and foliage showing bright autumnal tints. A snow scene follows for winter, even the fisherman seated in his boat in the foreground being covered with snow, and shoveling out white upon the sapient water. A grove of pines surrounds the temple buildings; all the other trees are bare, sketched in the same neutral shades that darken sky and water.

The neck of the vase has four small square panels filled with colored clouds. The shoulder is decorated with bands of conventional floral scrolls issuing from the mouths of two bats displayed upon a yellow ground. The borders and the openwork railing are enameled of soft coral-red, overlaid with gilded scrolls, succeeded by bands of blue with scrolls of gold peonies round the upper and lower rims.

The seal underneath, penciled in red on a white panel reserved in the middle of the pale-green enameled grounds, which characterizes the finest imperial porcelain of this period, is Ta Ch'ing Ch'ien lung nien chih—i. e., "Made in the reign of Ch'ien-lung (1735-95), of the Great Ch'ing [dynasty]."

Q
The following from the same large quantity
of the same

I present with the rest. The price was
fixed at the time of the sale, and was not
to be altered.

and also in the same quantity of the same.
The price was the same.

and also in the same quantity of the same.
The price was the same.

and also in the same quantity of the same.
The price was the same.





till it is ready to be shaped with the polishing knives. The damp paste must not be exposed to the sun, as the heat would crack it.

"With regard to the preparation of the color for the artists, it must be ground perfectly fine in a mortar; if coarse, spots of bad color will appear. Ten ounces of the material are put into each mortar, and it is ground by a special class of workmen for a whole month before it is fit to be used. The mortars used for grinding it are placed upon low benches, and at the sides of the benches are two upright wooden poles supporting cross-pieces of wood, which are pierced to hold the handles of the pestles. The men, seated upon the benches, take hold of the pestles and keep them revolving. Their monthly wage is only three-tenths of an ounce of silver. Some of them grind two mortars, working with both hands. Those who work till midnight are paid double wages. Aged men and young children, as well as the lame and sick, get a living by this work."

The color referred to above is still the cobalt-blue, the predominating color of old Chinese porcelain. The Chinese owe their success in the ceramic art in great measure to their careful and methodical preparation of the materials. Imagine the patience of a man sitting on a bench, as described here, for a whole month, with a pestle in each hand, grinding the same color all the time, and satisfied with monthly wages of less than half a dollar; with the addition, however, it is to be hoped, of an allowance of food! The editor of the official records of the imperial manufactory says that two of the chief criteria of success are perfect dryness and fineness of all the materials: "The furnace must be dry, the porcelain must be dry, and the fuel must be dry; then there will be little breakage, loss of shape, or dullness of color. The clay must be fine, the color must be fine, and the work of the artist must be fine; then the defects of coarse, rough finish, of spoiled coloring, and of stains will be avoided."

Oxide of cobalt is one of the most ancient and widely known of the coloring matters used in the decoration of all kinds of pottery. As M. Deck says in *La Faïence* (*loc. cit.*, page 185): "The beautiful blue color of the oxide of cobalt is persistent at the highest temperature of the porcelain furnace; its coloring power is so strong that the least trace is enough to color the vitreous flux. It has an immense vogue, and is the color most frequently used in ceramic decoration, both in ancient and modern times. It has the great advantage of accommodating itself to all fires, from the most violent to the most feeble. It combines and harmonizes with every kind of medium (*fondant*), and can be applied to all sorts of ceramic bodies, and its blue color is one of the most beautiful and the most solid in our palette. The Egyptians and Assyrians employed it from the highest antiquity; the Persians, Chinese, and Japanese have executed charming decorations with nothing but this blue; it is perhaps the most suitable color to be employed alone in decoration."

Illustration No. 11: "PAINTING THE ROUND WARE IN BLUE."

"The different kinds of round ware painted in blue are each numbered by the hundred and thousand, and if the painted decoration upon every piece be not exactly alike, the set will be irregular and spoiled. For this reason the men who sketch the outlines learn sketching, but not painting; those who paint study only painting, not sketching; by this means their hands acquire skill in their own particular branch of work, and their minds are not distracted. In order to secure a certain uniformity in their work, the sketchers and painters, although kept distinct, occupy the same house.

"As to the other branches of work—embossing, engraving, and carving in openwork they are treated in the same way, and each is intrusted to its own special workmen. The branch of decorating in underglaze red, although really distinct, is allied to that of painting. With regard to the rings round the borders of the pieces and the encircling blue bands, these are executed by the workmen who finish the pieces on the polishing wheel; while the marks on the foot underneath, and the written inscriptions, are the work of the writers who attach the seals.

"For painting flowers and birds, fishes and water plants, and living objects generally, the study of Nature is the first requisite; in the imitation of *Ming* dynasty porcelain and of ancient pieces, the sight of many specimens brings skill. The art of painting in blue differs widely from that of decoration in enamel colors."

In this rapid sketch of the art of painting in underglaze cobalt-blue most of the different processes of decoration displayed in collections of Chinese blue and white porcelain are touched upon. The blue is painted upon the white body of the porcelain before it is glazed by immersion or otherwise, and the encircling rings which define the borders of bowls and the shoulders of vases are easily penciled by a light touch of the brush as the object revolves on the jigger; by no other method could they be executed with such perfect regularity. A single line of blue

of this kind round the rim is the sole decoration of some of the translucently white eggshell wine-cups of the reign of *Wan-li*, which are among the lightest and most delicate objects ever produced in porcelain. The work of the writer, who outlines the seals and other marks and writes the labels and verses that accompany the pictures, is quite as important as that of the artist, in the estimation of the Chinese, who are great connoisseurs of calligraphy, and distinguish at first sight, from that one criterion, a piece of imperial manufacture (*kuan yao*) from the production of a private kiln (*ssü yao*).

Painted decoration in copper-red under the glaze properly finds its place here. The technique is the same, and the pieces, after they have been glazed, are fired in the same furnace as the blue and white. For an illustration, see Fig. 229. It may, of course, be used in combination with the blue in the decoration of the same vase, or with other colors of the *grand feu*, such as celadon, or coffee-brown.

Illustration No. 12: "FASHIONING AND PAINTING OF VASES."

"The different forms of vases and sacrificial vessels comprised in the general term of *cho k'ü* include the square, the round, the ribbed, and those with prominent angles; there are various styles of decoration executed by painting in colors and carving in openwork. In copies from antiquity artistic models must be followed; in novelty of invention there is a deep spring to draw from. In the decoration of porcelain correct canons of art should be followed; the design should be taken from the patterns of old brocades and embroidery, the colors from a garden as seen in springtime from a pavilion. There is an abundance of specimens of the *Kuan*, *Ko*, *Ju*, *Ting*, and *Chün* (wares of the *Sung* dynasty) at hand to be copied, and water, fire, wood, metal, and earth (the five elements of physics) supply an inexhaustible fund of materials for new combinations of supernatural beauty. Natural objects are modeled, to be fashioned in molds, and painted in appropriate colors; the materials of the potter's art are derived from forests and streams, and ornamental themes are supplied by the same natural sources. The sacrificial wine-vessels, *tsun* and *lei*, are of equal importance; the censers, shaped like the ancient bronzes, *ya* and *ting*, emit flames of brilliant color. In addition to the ancient earthenware drums (*wa fow*), many kinds of musical pipes are now made, and the artistic skill of the color-brush perpetuates on porcelain clever works of genius."

In this paragraph T'ang Ying, instead of describing the illustration, gives a disquisition upon his view of the correct canons of art, as applied to the decoration of porcelain, expressed in high-flown antithetical couplets, which are not so easy to render intelligibly in plain prose. Julien suppresses them altogether as "devoid of interest from the point of view of history and of fabrication," but they give us some insight into the ideas of a Chinese artist and the motives of his decorative work. Antiquity is always the first desideratum; the forms of the objects are taken from productions of the old ceramic factories of the *Sung* dynasty, which were themselves derived from more ancient bronzes; and the decorative designs are often derived from the patterns woven in China from the most ancient times in brocades or worked by the needle in silk embroideries. The prevalence of colored grounds, of medallions, and of all the varieties of diaper, in the decoration of Chinese porcelain, is traced back to the occurrence of similar patterns in these brocaded and embroidered silks.*

Illustration No. 13: "DIPPING INTO THE GLAZE AND BLOWING ON THE GLAZE."

"All the different kinds of round ware and vases, including the pieces decorated in blue, as well as the copies of *Kuan*, *Ko*, and *Ju* porcelain, must have the glaze applied before they are fired. The ancient method of putting on the glaze was to apply it to the surface of the vase, whether square, tall, fluted, or ribbed, with a goat's hair brush filled with the liquid glaze, but it was difficult to distribute it evenly in this way. The round ware, both large and small, and the plain round vases and sacrificial vessels used all to be dipped into the large jar which held the glaze, but they failed by being either too thickly or too thinly covered, and, besides, so many were broken that it was difficult to produce perfect specimens.

"In the present day the small round pieces are still dipped into the large jar of glaze liquid, but the vases and sacrificial vessels and the larger round pieces are glazed by the *soufflé* process. A bamboo tube one inch in diameter and some seven inches long has one of its ends bound round with a fine gauze, which is dipped repeatedly into the glaze and blown through from the other end. The number of times that this process has to be repeated depends partly on the size of the piece, partly on the nature of the glaze, varying from three or four times up to seventeen or eighteen. These are the two distinct methods of glazing: by immersion and by insufflation."

* The names of more than twenty of these brocade patterns that were copied in *Ming* porcelain were enumerated in Chapter VII.

The glaze contains a notable proportion of lime, which aids in the liquefaction of the feldspathic base, and gives the slight greenish tinge to the ground, which is one of the characteristics of Chinese porcelain. It is applied in China upon the raw body of the piece, which has been previously dried in the open air. In other countries the unglazed ware undergoes a preliminary baking to bring it to the condition called *dégourdi*, so that even the largest pieces may be strengthened sufficiently to enable them to be dipped in the water holding the materials of the glaze in suspension. The porous clay absorbs the water, and there is deposited on the surface a uniform layer of the vitrifiable materials suspended in it. Large vases five feet in height are glazed in this way at Sèvres, being placed in open wooden cages and lowered by means of pulleys; they are immersed for thirty or forty seconds, according to the greater or less strength of the preliminary baking, and are then allowed to drain, after which any difference of thickness is corrected as much as possible by hand.

The French consul, M. Scherzer, fully describes the Chinese method of glazing by sprinkling: "Having brought the finely pulverized materials to the consistence of a liquid *bouillie* by mixing them with pure water, the workman takes a tube of bamboo which he covers at one end with fine gauze and dips it into the glaze, which he projects upon the vase by blowing through the opposite end. The number of layers that the workman sprinkles in this way depends upon the nature of the glaze. For the white, three layers are applied successively by blowing, while the fourth and last layer is given with a very soft brush. For the colored glazes the operation is more complicated and comprises nine successive layers; the first three are applied by blowing the glaze upon the piece properly dried, sufficient time being left between each to acquire its original dry condition. The fourth layer is painted on with a very soft brush. The fifth, sixth, and seventh layers are given by blowing. Finally, the eighth and ninth are applied with the brush."

M. Vogt says that the qualities required for a perfect glaze are so numerous that its preparation is unquestionably one of the most delicate operations of the ceramic art. A good glaze ought, during firing, to spread uniformly over the piece that is being enameled, without forming either of the defects of "shrinkage" or "bubbling." Its fusibility ought to be adapted to the degree of temperature required for the firing of the paste. If too fusible, it will penetrate the paste, and the glazing will be dull and dry; if too hard to melt, it will be covered all over with little holes, which give to the porcelain the peculiar appearance that is called technically *coque d'œuf*. There must, besides, be a perfect agreement in the coefficient of dilatation between the paste and the glaze. If not, as the porcelain cools the glaze will break, and its surface will be soon furrowed by a network of lines. This crackled condition, which is called technically *tressailure*, is due solely to a physical cause; it is the result of a difference of dilatation between the paste and the glaze, as the piece is returning to the surrounding temperature. The crackles are started when the glaze, as it is cooling, contracts more than the paste; being fixed to the paste, it must necessarily crack, and the space between the lips of the furrows indicates the difference of contractibility. In the inverse case—that is to say, when the paste contracts more than the glaze—the glaze may be detached in splinters and "scale off"; a piece with this defect is irretrievably lost. It is not so with the defect called *tressailure*. A perfect master of paste and glazes can produce at will fissures in the glaze, forming more or less close networks, composed of lines joining together with no long straight lines between; in this case a defect is converted into a good quality, and we have the *craquelé* or *truite*. The Chinese make such good use of this quality as to be able to produce on the same piece crackled zones of different dimensions in the midst of uncrackled glazes.

The conditions that change the coefficient of dilatation in porcelain are not well ascertained; it is known, however, that alkalis increase it in the glaze, and that silica increases it in the



FIG. 290.—Saucer-bottle; blue and white flower design on brown crackled ground.

paste. A paste rich in alumina, invested with a non-calcareous glaze, always tends to become crackled, according to M. Vogt. This is confirmed by Chinese accounts. The Ting Yao, the so-called "soft porcelain" of collectors, which is so apt to become crackled, is characterized by a highly kaolinic paste, and the glaze is prepared without lime. The milk of lime, which is an important ingredient of the ordinary Chinese glaze, is replaced in the crackled glazes by a *purée* composed principally of steatite previously ground to a fine powder. Any of the ordinary colored glazes may be crackled by adding this last to their ordinary ingredients. Some glazes are always crackled, without requiring the addition of anything to their ordinary ingredients, like the turquoise and aubergine purple, single colors of the *demi-grand feu*, which are both of *truité* texture; the turquoise glaze is rich in alkali, being prepared with a niter flux, and the aubergine glaze is combined with a minimum amount of lead.

Many of the curious ceramic terms met with in old Chinese books are due to alterations of the glaze during firing, such as "palm-eye" spots, the effect of bubbles, "crab's-claw" and "chicken's-claw" veining in the substance of the unctuous glaze, and "orange-peel" texture of its undulatory surface. These partake really of the nature of small flaws, a recent Chinese writer remarks, and are only particularly noticed as criteria of genuine productions of an early time, when the porcelain was not so perfectly glazed as it is in the present day.

Illustration No. 14: "TURNING THE UNBAKED WARE AND SCOOPING OUT THE FOOT."

"The size of the round piece has been fixed in the mold, but the smooth polish of the surface depends on the polisher, whose province is another branch of work, that of 'turning.' He uses in his work the polishing wheel, which in form is like the ordinary potter's wheel, only it has projecting upward in the middle a wooden mandrel, the size of which varies, being proportioned to that of the porcelain which is about to be turned. The top of this mandrel, which is rounded, is wrapped in raw silk to protect the interior of the piece from injury. The piece about to be turned is put upon the mandrel, the wheel is spun round, and it is pared with the knife till both the inside and outside are given the same perfectly smooth polish. The coarser or finer finish of the form depends upon the inferior or superior handiwork of the polisher, whose work is consequently of great importance.

"With regard to the next process, that of scooping out the foot, it is necessary, because each piece, when first fashioned upon the potter's wheel, has a paste handle left under the foot two or three inches long, by which it is held while it is being painted and the glaze blown on. It is only after the glazing and the painting of the decoration are finished that this handle is removed by the polisher, who at the same time scoops out the foot, after which the mark is written underneath.

"In the picture the workmen are seen occupied in the two processes of polishing the surface and scooping out the foot."

To prepare the porcelain for the polishing wheel or "jigger," it has to be dried sufficiently to enable it to be shaved with the knife without being reduced to powder. The tools used by the Chinese workmen are of the simplest kind—thin iron plaques of rectangular or curved outline. The piece is mounted upon the mandrel, so that its axis is a prolongation of the axle-tree of the apparatus, and it is shaved down to the required thickness while the wheel is revolving. Encircling bands or filets that have to be executed in relief, and rings defining the shoulder or borders of the vase, are carved at the same time with a neatness and regularity that no other process could attain.

The removal of the shapeless lump of clay which has been left projecting underneath the foot is one of the last operations in the fabrication of the piece; the mark is penciled in blue, the glaze is applied over it, and the piece is ready for the furnace. The rim round the edge of the foot is left uncovered with glaze, and exhibits the peculiar character of the paste to the eye of a connoisseur. In older specimens no glaze is applied to the foot, and a portion even of the outside of the bowl or cup is left unglazed, the glaze running down in thick, unctuous masses so as only partially to cover the surface, stopping short in a wavy line of thick drops. During the *Ming* dynasty there were some characteristic differences in the feet of bowls which may be noted in this connection. The shallow spreading eggshell bowls of the reign of *Yung-lo* have a sandlike rim and smoothly glazed bottom; the altar-cups of the reign of *Hsüan-té* have a conical projection in the middle with a threadlike rim at the edge; the shallow cups

PLATE LXV
DECORATED CITRON YELLOW
VASE

FLOWER-VASE (Hua
Ying), of graceful ovoid shape,
with tapering neck and expand-
ed rim, enameled with a pure mono-
chrome glaze of delicate citron-yellow
tint. The yellow ground is interrupted
on both sides of the vase, to be decorated
by little pictures sketched in sepia upon
a white ground. The pictures are rep-
resented as if painted upon scrolls, par-
tially unrolled, so as to show the ho-
caded mounts at the sides, one is a
mountain landscape with a pilgrim in
the foreground on a bridge leaning upon
his staff, the other a rustic scene with a
cottage in front.

The rim of the lip and the interior
of the mouth are white, with a tinge of
green, and the foot of the same color,
underneath, with no inscription. It is
a choice specimen of a monochrome glaze,
which seems to have been produced in
such perfection only in the reign of
Yung cheng (1723-35).



1. The first part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity.

2. The second part of the paper is devoted to a discussion of the general principles of the theory of the structure of the molecule. It is shown that the structure of the molecule is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity.

3. The third part of the paper is devoted to a discussion of the general principles of the theory of the structure of the crystal. It is shown that the structure of the crystal is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity.

4. The fourth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the liquid. It is shown that the structure of the liquid is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity.

5. The fifth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the gas. It is shown that the structure of the gas is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity.

6. The sixth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the plasma. It is shown that the structure of the plasma is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity.

7. The seventh part of the paper is devoted to a discussion of the general principles of the theory of the structure of the solid. It is shown that the structure of the solid is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity.

8. The eighth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the liquid crystal. It is shown that the structure of the liquid crystal is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity.

9. The ninth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the polymer. It is shown that the structure of the polymer is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity.

10. The tenth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the composite material. It is shown that the structure of the composite material is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are determined by the laws of the special theory of relativity.





painted with fish, of the reign of *Chia-ching*, have a circularly rimmed base with a loaflike prominence inside the bowl. In the present dynasty, too, the foot of the vase is often examined as an aid to the determination of its date, the presence or absence of glaze, its plain or crackled texture, and its particular shade of color affording a valuable criterion for that purpose in different cases.

Illustration No. 15: "PUTTING THE FINISHED WARE INTO THE KILN."

"The kiln is long and round, and resembles in shape a tall water-jar (*ueing*) turned over on its side. It measures a little over ten feet in height and breadth, about twice as much in depth. It is covered with a large, tiled building which is called the 'kiln-shed.' The chimney, which is tubular, rises to a height of over twenty feet behind, outside the kiln-shed.

"The porcelain, when finished, is packed in the seggars and sent out to the furnace men. When these men put it in the kiln they arrange the seggars in piles, one above the other, in separate rows, so as to leave an interspace between the rows for the free passage of the flames. The fire is distinguished as front, middle, and back; the front of the fire is fierce, the middle moderate, the back feeble. The different kinds of porcelain are placed in the furnace according to the hard or soft quality of the glaze with which they are coated. After the kiln has been fully charged the fire is lighted, and the entrance is then bricked up, leaving only a square hole, through which billets of pine wood are thrown in without intermission. When the seggars inside the furnace have attained a silvery red color (white heat) the firing is stopped, and after the lapse of another twenty-four hours the kiln is opened."

The form of the furnace has already been fully described, and the changes in its dimensions from ancient to modern times have been alluded to. It has gradually become larger in size, till in the present day, according to M. Scherzer, although the breadth is about the same as that described above, being three and a half meters, the height and length are increased by about one-half to five meters and ten meters respectively. The way in which the Chinese take advantage of the irregularity of the form and of the varied force of the fire in different parts of the furnace has also been described. During the *Ming* dynasty there were different kinds of furnaces in the imperial manufactory—furnaces for the clay seggars, for the large garden fish-bowls, for the blue and white porcelain, and for the colored glazes, etc. In the present day there are none, with the sole exception of the muffle stoves for the second firing of the porcelain painted in enamel colors. Everything is sent out to be fired in the private kilns, called *Pao Ch'ing Yao*, because they guarantee the success of each firing. There are two classes of kilns at Ching-tê-chên. In the first kind the fuel is pine wood; all the imperial porcelain is sent to these. In the second kind, which are intended for the firing of the commoner and coarser porcelain, the fuel is ordinary brushwood, which is brought in by men from the neighboring hills.

Illustration No. 16: "OPENING THE KILN WHEN THE PORCELAIN HAS BEEN FIRED."

"The perfection of the porcelain depends upon the firing, which, reckoning from the time of putting in to that of taking out, usually occupies three days. On the fourth day, early in the morning, the furnace is opened, but the seggars inside, which contain the porcelain, are still of a dullred color, and it is impossible to enter yet. After a time the workmen who open the kiln, with their hands protected by gloves of ten or more folds of cotton soaked in cold water, and with damp cloths wrapped around their heads, shoulders, and backs, are able to go in to take out the porcelain.

"After the porcelain has all been removed and while the furnace is still hot the new charge of ware is arranged in its place. In this way the new porcelain, which is still damp, is more gradually dried, and is rendered less liable to be broken into pieces or cracked by the fire.

"The men in the picture who are leaning on the table wrapped in cloths are those that take the porcelain out of the kiln, the other men who are carrying loads of firewood are waiting to fire the next charge; the actual process of carrying out the contents of the furnace is not clearly indicated."

During each firing the "gentle fire" or *petit feu* is kept up for about twenty-four hours, to heat the porcelain gradually, until the interior is brought from a dull red to a cherry red. Having attained this stage, the period of the "fierce fire" or *grand feu* begins, during which pine billets are thrown in as fast as possible till the furnace is quite full, and it is kept full till the necessary white heat has been attained, and this is continued during the third stage.

This is the general course of the fire, but its effect varies in different parts of the furnace according to the oxidizing or reducing nature of the flames. If air predominates in the products of combustion, the flame will be *oxidizing*; if, on the contrary, unburned gases are circulating in excess, the flame will be *reducing*. The fireman judges by inspection: if the flames are perfectly clear, he considers them to be oxidizing; if they are thick and loaded with heavy volumes of smoke, he concludes they are reducing. A clever fireman is able at will to make his furnace pass from one to another of these conditions, and ought even to know how to keep the flames neutral, neither oxidizing nor reducing, which will give the maximum temperature without exerting any chemical influence upon the porcelain that is being baked.

All hard porcelain is composed essentially of kaolin, feldspar, and quartz. To give to this mixture the transparency and vitrification which characterize porcelain, it is necessary to reach during the firing at least the temperature required to fuse the feldspar. Feldspar fuses at about 1300° C., and this is the minimum point at which a porcelain rich in feldspar can be successfully fired. For a highly kaolinic porcelain it is necessary to push the heat up to 1500°, or even to 1550°. Submitted to these high temperatures, the elements of the porcelain change their nature; the feldspar in fusion attacks the quartz and the kaolin to form new combinations.

Illustration No. 17: "ROUND WARE AND VASES DECORATED IN FOREIGN STYLE."

"Both round ware and vases of white porcelain are painted in enamel colors in a style imitated from Western foreigners, which is consequently called *Yang ts'ai*, or 'Foreign Coloring.' Clever artists of proved skill are selected to paint the decoration. The different materials of the colors having been previously finely ground and properly combined, the artist first paints with them upon a slab of white porcelain, which is fired to test the properties of the colors and the length of firing they require. He is gradually promoted from coarse work to fine, and acquires skill by constant practice; a good eye, attentive mind, and exact hand being required to attain excellence.

"The colors which are employed are the same as those used for *cloisonné* enameling upon copper (*Fa-lang*). They are mixed with three different kinds of medium, the first being turpentine, the second liquid glue, the third pure water. Turpentine is best adapted for free coloring; glue is more suitable for thin washes, water for retouching the colors in relief. While it is being painted the piece is either supported upon a table or held in the hand, or laid upon the ground, according to its size, and it is placed in the position most convenient for the ready use of the brush."

The art of *cloisonné* enameling upon copper was introduced into China from the West. It was one of the early industrial arts of Byzantium, and is fully described in the writings of the monk Theophilus, who lived in the eleventh century A. D. It was from Byzantium that it must have come to China, as is clearly proved by the Chinese name for the art, *Fa-lan*, or *Fa-lang*, which is a corruption of *Fo-lang*, or *Fo-lin*,* the name of Byzantium in the Chinese historical annals. As explained by the author of the *T'ao Shuo*, the syllable *lin* is pronounced *lang* in the dialect of Canton, and he accounts in this way for the change of *Fo-lin* to *Fo-lang*. *Fo-lang* *Ch'ien*, or "*Fo-lang* inlaid work," is given by him as the correct form of the full name; but the Chinese shirk trisyllabic locutions as too complicated, so the third syllable was first dropped; the others became gradually corrupted to *Fa-lan*, in which the second character means "blue," and all trace of the original derivation is lost. Another common name for the art, which is cultivated in Peking in the present day, is *Ching-tai Lan*, or *Ching-tai* enamel, and the mark of the reign of *Ching-tai* is not infrequently found underneath ancient specimens. The emperor of the *Ming* dynasty who reigned under this title occupied the throne in 1450-56, and he is said to have patronized the art, and to have had sets of sacrificial utensils made

* The name of *Fo-lin* or *Fu-lin* has given rise to much discussion. It first occurs in the annals of the *Sui* dynasty (581-621) as the name of a country situated 4,500 li to the northwest of Persia. It often occurs subsequently, applied to the Greek Empire as the successor of the Roman Empire (*Tu Ch'iu*), and as rivals of the rising Arabs (*Tu-Sha*). The initial was originally hard in Chinese, and the name is generally supposed to be derived from *ῥώμη*, just as the Turkish name of Constantinople (Stamboul, or Istanbul) seems to be a corruption of *ἡ ῥώμη*. The Greeks were proud of the title of "citizens" of their great city. Some derive the name from "Franks," but the Chinese could hardly have heard of the Franks so early as the sixth century. Dr. Hirth's valuable paper on *China and the Roman Orient* may be referred to for a fuller discussion of the question, without adopting, however, his proposed identification of *Fo-lin* with Bethlehem.

PLATE LXVI
EGGSHELL DISH WITH
TASSELLED FAN

SAUCER-SHAPED DISH
(Tieh) of eggshell porcelain dec-
orated with brilliant enamel colors
of the famille rose and gilding.

The motive of the decoration is a
screen fan, laid down, as it were, in the
dish upon a bed of flowers. The screen
is painted with the picture of a pheas-
ant perched upon a rock, with daisies
and grass and a branch of shan-li-
nung berries in the background. It
has a curved bamboo handle tinted red,
gilded mounts, and black tassels attached
by silver cords. The flowers are sprays
of peony and chrysanthemum, displayed
in bright colors upon the sepia ground
of diapered pattern, which is seen lin-
ing the rest of the interior of the dish.
The rim is encircled by a wavy band of
conventional floral sprays, studded with
alternate peony and chrysanthemum
flowers, pearly in sepia and filled in
with gold.

Period Yung-ch'eng, or Ch'ien-
lung (1723-95).



2.

in 1840, the first of a series
of small islands in the
vicinity of the coast of
the island of Java, in
the Dutch East Indies.



... of the ...
... of the ...
... of the ...
... of the ...
... of the ...





for temples. It was in 1453 that Constantinople was taken by the Turks under Mohammed II, and some of the Greek workmen may possibly have come to China as fugitives about this time.

Julien translates the expression *Fo-lang Ch'ien Yao*, "Porcelaines à incrustations (*ornées d'émaux*) de *Fo-lang* (*de France*)."¹ Although it is a kiln ware (*yao*), it has certainly nothing to do with porcelain, and there is no probability of its introduction into China having been due to France, although it is adopted by Salvétat, who writes: "This fact presents by itself a very great importance in the history of the industrial progress of nations. It is well known that in China enamels upon copper are made in great perfection. It appears to follow from this passage that the Chinese only made these enamels in imitation of productions that Europe—perhaps France—sent to them by way of exchange."

The old Byzantine enamels were generally worked upon gold. In China the usual excipient is copper, which is gilded after the enamels have been fired and polished, so that the designs appear like a mosaic of colors inclosed in *cloisons*, the outlines of which are defined by a line of gold. Two other processes of enameling are also executed in China: the *champlevé*, in which the pattern is excavated in the solid copper vase, to be filled in with the enamel colors; and the transparent (*à jour*) enameling, in which the colors are inserted in open *cloisons*, having no background; both these methods were employed previously in Byzantium, and may be seen also in old Russian ecclesiastical work. There is yet a fourth process of enameling on copper in China, where the colors are painted on without any previous preparation of the excipient; this is chiefly carried on in the province of Canton, where the art is said to have been introduced from the country of Ku-li—i. e., Calicut, in India; the productions are commonly known under the name of *Yang ts'ü*, or "foreign porcelain." The author of the *Wên fang ssü K'ao* says of this: "One often sees incense-urns and flower-vases, winecups and saucers, bowls and dishes, wine-ewers and boxes, painted in very brilliant colors; but, although vulgarly called porcelain, they have nothing of the pure translucency of the true material, and are fit only for the service and ornament of the ladies' apartments—not for the chaste decoration of the library of a scholar or mandarin."

The enamel colors in the present day are manufactured in the glass-works in the province of Shantung, and sent thence to every part of China to be employed in all kinds of enameling upon metal, and in the glazing of common earthenware and *faïence*, as well as in the decoration of porcelain. They are composed of a vitreous flux, colored by a small percentage only of metallic oxide, which is generally kept in solution in the state of silicate. The coloring materials are oxide of copper for the greens and bluish greens; gold for the reds; oxide of cobalt for the blues; oxide of antimony for the yellows; arsenious acid for the whites; peroxide of iron is used for coral-red and other shades of this color, and impure oxide of manganese gives the blacks. The last two materials which give the colors directly are only mixed with the flux, not dissolved. These form the colors of the muffle stove, by the fire of which they are incorporated in the softened white glaze. It is impossible to employ them in the decoration of European porcelain, the hard glaze of which contains no lime, and when the Chinese enamel colors were tested at Sèvres they scaled off in the stove. They have all been thoroughly examined in Europe and chemically analyzed.

Illustration No. 18: "OPEN AND CLOSED MUFFLE STOVES."

"White paste porcelain that has been previously fired in the furnace is first decorated by the artist with painting in colors. When it has been painted in colors it must be again fired to fix the colors. For this purpose two kinds of muffle stoves are used, one kind being open, the other closed.

"The open stove is used for the smaller pieces. This stove is similar to that used for *cloisonné* enamels on copper, and it has a door opening outward. When the charcoal fire has been lighted inside, the porcelain is placed upon an iron wheel, which is supported upon an iron fork, by which the porcelain is passed into the stove, and



FIG. 291.—Snuff-bottle; perforated design in reticulated work upon ground of broken sticks; dark green glaze

the fireman holds in his other hand an iron hook, so that he may be able to turn the wheel around in the fire to equalize the action of the heat. When the colors appear clear and bright the firing is reckoned to have been sufficient.

"For large pieces the closed stove is employed. This stove is three feet high and nearly two feet and three-quarters in diameter. It is surrounded by a double wall to hold the charcoal fire, the wall being perforated below for the entrance of air. The porcelain is introduced into the interior of the stove, while the man holds a circular shield to protect himself from the heat of the fire. The top of the stove is then closed by a flat cover of yellow clay and closely luted. The firing takes a period of about twenty-four hours.

"The process of firing the monochrome yellow, green, and purplish brown porcelains is the same as the above."

The open muffle stove is no longer used in China. The author of the *Ching-tê-chên T'ao lu* says (chapter iv, folio 5): "Porcelain painted in colors at Ching-tê-chên was formerly not so highly valued, until the beginning of the reign of *Ch'ien-lung*, when both the mandarins and the common people thronged to buy it, so that the supply had to be day by day increased. The manufactories are commonly called 'red shops,' but the owners style themselves 'stove-men.' They do not, however, use open and closed muffle furnaces made in the ancient style, but only build up a cylinder of bricks on the ground like the mouth of a well, a little over three feet high and between two and three feet broad, leaving holes underneath for the draught. The decorated porcelain is put inside, a cover is fixed over the fire, and that is all. It is called a muffle stove (*shao lu*), and there are fixed rules for the time of firing. If you ask them what the open and close stoves are, they will generally answer that they do not know."

There is a good representation of this modern *shao lu* in Julien (*La Porcelaine Chinoise*, Plate XIV), which is copied from the book just quoted. The open stove which accompanies it is taken from some older Chinese book. There are good illustrations of the open and closed muffle stoves of the forms described above in the Atlas accompanying Brongniart's classical work (*Les Arts Céramiques*, Plate XLIV) taken from a Chinese book of the *Ming* dynasty.

Illustration No. 19: "WRAPPING IN STRAW AND PACKING IN CASES."

"After the porcelain has been taken out of the furnace it is arranged into four separate classes, which are known by the names of 'first-class color,' 'second-class color,' 'third-class color,' and 'inferior ware,' and the price is fixed accordingly at a high or low rate. The porcelain of 'third-class color' and the 'inferior ware' are kept back for local sale. The round ware of 'first-class color' and the vases and sacrificial vessels of the 'first and second class' are all wrapped up in paper and packed in round cases, there being packers whose duty it is to attend only to this work. With regard to the round ware of 'second-class color,' the dishes and bowls are tied together in bundles, each composed of ten pieces, which are wrapped round with straw and packed in round cases, for convenience of carriage to distant parts.

"The coarser porcelain intended for ordinary use, which is distributed throughout the different provinces, is not packed in cases with straw, but only tied up in bundles with reeds and matting. From thirty or forty pieces up to sixty make a 'load' sufficient for a man to carry at each end of his yoke. The 'loads' are packed inside with reeds and matting and bound round outside with strips of bamboo, ready to be conveyed either by water or by land as may be more convenient.

"The workmen who do the packing are generally known by the name of 'mat-men.'"

The above description refers especially to the productions of the imperial manufactory, only the best pieces of which are picked out to be sent to Peking, while the rest are sold locally. A regular supply is sent to the palace twice every year, an additional amount being requisitioned on any extraordinary occasion, such as an imperial wedding; the lists are generally published at the time in the *Ching Pao*, the official "Peking Gazette." According to T'ang Ying in his "Records of the Porcelain Manufactory," quoted in the *Annals of the Province of Kiangsi*: "After the porcelain made in the imperial manufactory has been finished, every year at the two seasons of autumn and winter, a number of broad flat-bottomed boats and a gang of porters are hired to convey to the capital the six hundred and more casks packed with round pieces and vases. The annual supply required for the palace of round ware of the highest class, including round dishes, bowls, cups and saucer-plates, ranging from between one and two inches up to two and three feet in diameter, amounts to between 16,000 and 17,000 pieces, in addition to 6,000 or 7,000 pieces selected from the best of the second class. These are all packed together in casks and conveyed to Peking, to be ready for imperial presents, and for the emperor's own use. The vases of all kinds intended for ornamental and sacrificial use of the

PLATE LXVII
NOTCHED BOWL DECORATED
WITH RED DRAGONS

BOWL (Wan), molded after a characteristic design of the reign of Yang lo, with spreading sides and a gently everted rim nicked at regular intervals in six places. Of eggshell texture and marvelous transparency, it has yet, in addition to the painted decoration, a complicated pattern molded in relief in the paste inside, consisting of an interlacing scroll of lotus lifting up eight blossoms to support the eight Buddhist emblems of happy augury (pa chi hsiang), which form a circle round the rim of the bowl, surrounded by waving fillets; this ornamentation, too fugitive to be illustrated, has the effect, under transmitted light, of watered satin or water marked paper. The decoration, painted in coral-red over the glass, consists of nine four-clawed dragons—two pairs inside and two outside—speeding round the sides in pursuit of whirling jewels, all enveloped in furled flames, and the mouth coiled in a ring in the bottom of the bowl.

This is one of the exclusive designs sacred to the emperor, and the dragons are all four-clawed, a special mark of the K'ang-hsi period (1662-1722), to which this bowl belongs. It is thinner and more perfect in technique than a Ch'ien-lung bowl, with a glass of softer tone, although not so brilliant nor so vitreous in aspect, and is of the same style and date as the vase figured in Plate XXVIII.







highest class, including ovoid vases with tall, narrow necks, sacrificial vases with scrolled designs, beaker-shaped vases and urns for burning incense, etc., ranging from three and four inches up to three and four feet in height, require a yearly supply of over 2,000 pieces, without reckoning the 2,000 or 3,000 vases selected from the best of the second class. These also are all packed together in casks and conveyed at the same time to Peking."

In addition to the firing of the imperial porcelain, the kilns at Ching-tê-chên, which are numbered by the thousand, practically supply the whole of the Chinese Empire, as well as the porcelain required for export to foreign countries. Boats laden with it are no uncommon sight in the inland waterways of China, and I have even seen a line of large wheelbarrows under full sail, pushed and supported on both sides by running men and drawn in front by donkeys, speeding along the highways

"Of Sericana, where Chinese drive
With wind and sail their cany waggons light."
Paradise Lost, iii, 437.

Illustration No. 20: "WORSHIPING THE GOD AND OFFERING SACRIFICE."

"Ching-tê-chên, situated within the jurisdiction of Fou-liang Hsien, is only some ten or more *li* in circuit, enveloped by mountains and rivers, so as to form, as it were, an island, yet on account of its porcelain production merchants throng to it from all quarters. The private kilns, between two and three hundred in number, exhibit a constant succession of flames and smoke the whole year round, and give employment to not less than several hundreds of thousands of workmen and assistants. The porcelain industry gives subsistence to an immense number of people whose life hangs on the success or failure of the furnace fires, and they are all devout in worship and sacrifice.

"Their god, named Tung, was once himself a potter, a native of the place. Formerly, during the *Ming* dynasty, when they were making the large dragon fish-bowls, they failed in the firing year after year, although the eunuchs in charge inflicted the most severe punishments, and the potters were in bitter trouble. Then it was that one of them, throwing away his life for the rest, leaped into the midst of the furnace, whereupon the dragon bowls came out perfect. His fellow-workmen, pitying him and marveling, built a temple within the precincts of the imperial manufactory, and worshiped him there under the title of 'Genius of Fire and Blast.' Down to the present day the fame of the miracle is cherished, and the potters continue to worship him, not a day passing without reverential sacrificial offerings. Theatrical shows are also instituted in his honor, during which crowds of people fill the temple grounds. He is worshiped here as the tutelary gods of agriculture and land are in other parts of the empire."

The Chinese are devoted to ancestral worship, in the ceremonies connected with which sacrifice is offered to the *manes* or spirits of the deceased. Many of their deities are canonized mortals who have lived among them in historical times. No schoolboy must enter a public school without paying reverence to the picture of the sacred sage, Confucius, who lived A. C. 551-479; and every soldier worships the image of Kuan Ti, the God of War, who lived on earth as Kuan Yü, and was beheaded A. D. 219, after a life of martial prowess. The potter, Tung, the vicarious sacrifice of whose life is sketched above, was not, however, the first deity of the craft. His predecessor was named Chao, according to the *Ching-tê-chên T'ao lu* (book xiii, folio 10), which says that it was in the reign of *Hung-hsi*, who lived A. D. 1425, that the assistant director of the porcelain manufactory, Chang Shan, was the first to worship the patron god of the potters, and built a temple within the walls of the manufactory. The deity, whose surname was Chao, his name K'ai, and his literary appellation Shu-pêng, is said to have been in charge of the work during the *Chin* dynasty (265-419), to have acquired a wide reputation for the choice productions inspired by his genius, and to have risen afterward to the rank of prince. It was in this dynasty that the famous azure-blue glaze first came into vogue, and we should like to know more of the history of the director Chao, if he be not altogether a legendary character. His temple has long been in ruins, and his cult is now supplanted by that of another patron god. The present temple was rebuilt in the reign of *Yung-chêng* by Nien Hsi-yao, as commemorated by a stone tablet, erected by him in front of the main hall, which is still standing. Tang Ying, in the next reign, discovered a large fish-bowl, decorated with dragons, of the reign of *Wan-li*, the bottom of which had fallen out in the kiln, and had it installed in the temple courtyard as a specimen of the porcelain "composed of the blood and bones of the deity."



Fig. 292. Snuff bottle, with intricate designs in high relief of lions chasing wheel and flame emblems; Ch'ien-lung.

CHAPTER XVI.

MODERN PERIOD (1796-1895).—IMPERIAL LIST OF THE YEAR 1864.

DURING the long reign of *Ch'ien-lung*, which came to an end in 1795, there was a gradual degeneration in the artistic qualities of the porcelain produced at the imperial manufactory, and this is reflected in a still more marked degree in the ceramic products of the private kilns of *Ching-té-chên*. The decoration lost by degrees much of its vigor and freedom of execution, and the colors gradually failed in the depth, purity, and brilliancy of tone which distinguished the older period. These defects are not compensated by a certain improvement in technical manipulation and a studied finish of design, which are mechanical rather than artistic. A century has passed since the death of *Ch'ien-lung*, and there has been hardly any check to this steady progress of degeneration in any of the five reigns of his successors. These reigns may be conveniently grouped together to form the modern period of the ceramic art in China, which will consequently comprise about a century, dating back from to-day. They are barely represented in collections, unless perhaps by an occasional imitation, which has been so perfectly reproduced as to deceive the unwary collector. Still, some knowledge of the porcelain of the time is necessary, if only to enable one to distinguish such modern counterfeits from the real antiquities that they are intended to represent. A glance at the designs and processes of decoration in use at the present time is necessary, moreover, to help us to understand the descriptions in the older books, when we have not the actual pieces before us. Chinese art, more perhaps than any other, is essentially reproductive and imitative, and most of the modern designs can be traced back to early periods. The artists seem to have no inventive faculty, and yet it is astonishing to notice how rarely they adopt anything from abroad in recent times.



Fig. 293. Double snuff bottle with coral red decoration; Ch'ien-lung.

The imperial porcelain of the reign of *Chia-ch'ing* (1796-1820) can hardly be distinguished, except by the mark, from that of *Ch'ien-lung*. It is highly appreciated by the Chinese connoisseurs on account of its finished technique and the perfect regularity of its decorative designs. The figure scenes are carefully painted, and the scrolled borders and lambrequins are finely and neatly penciled. There is a class of vases, characteristic of this reign, which are entirely covered with elaborate scrolls of diverse pattern in underglaze blue, enhanced by a richly gilded background, and which are highly decorative; but this highly ornate style of decoration seems more fitting for enameling on metal than on a fragile material like porcelain. The mark on the imperial porcelain of this reign is usually attached in the form of a seal, impressed in the paste; the foot, as well as the interior of the vase, is often glazed with the same pale-green enamel that was noticed in the official productions of the preceding reign.

The perfect finish of the monochromes of the time is beautifully shown in the finely crackled turquoise vase that has been illustrated in Fig. 8, which is delicately etched under

PLATE LXVIII
THREE SPECIMENS OF BLUE AND
WHITE

RICE-BOWL (Fan Wan), 7 $\frac{1}{2}$ inches in diameter, of the Kang-hsi period (1662-1722), artistically decorated in shaded blue, with a lake scene, a group of storks standing in a clump of lotus, rocks and panted reeds in the background; a medallion of lotus-flowers is painted inside in the bottom of the bowl, and a band of sprays of the same flower round the inner rim. The mark underneath is a six-spoked wheel encircled by a wavy fillet with dots, simulating a flower, an identical mark occurs on a brilliant "hawthorn-spray" plate in the collection dating from the same period.

2. **WATER RECEPTACLE** (Shu Ch'ang), 2 $\frac{1}{2}$ inches high, for the writing-table, in the form of an ordinary teapot, decorated in soft-tinted blue under a crackled, soft-looking lén-tung glaze of ivory-white tint. It is decorated with the paraphernalia of the scholar: a censor, a book, and a water-pot with ladle inside on a palm-leaf, in front; a lyre in its braided case and a jade scepter tied with fillets, behind; and with four symbols on top: a musical stone, a Buddhist wheel, a vase, and a "cash," and two on the cover, with cloud scrolls between the symbols. The mark underneath is yu, "jade," the period that of Kang-hsi (1662-1722).

3. **MINIATURE VASE** (Hsiao Ping), 3 inches high, delicately painted in blue, the depressed bulging body covered with interlacing scrolls of Indian lotus, the neck, which is marked near the base by a prominent white ring, encircled by conventional bands of spiral and triangular fret and foliated design respectively.

The mark underneath, in well-written characters, penciled inside a double ring, is Ta Ming Hsiao t'ien chih—i. e., "Made in the reign of Hsiao-t'ien (1426-35), of the Great Ming [dynasty]."

RICE BOLL (400 Hb) 2' 10"

in front of her in the crowded room and a full

The most difficult part of the work is to find a good place to put the things.

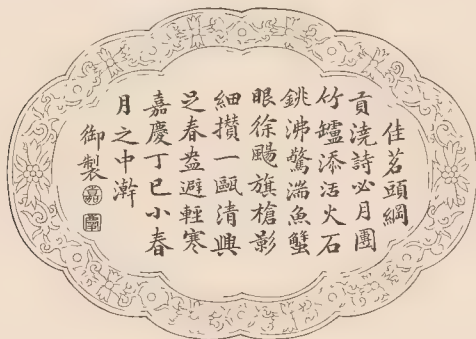




the soft-toned glaze with dragons and bats enveloped in scrolled clouds, and is marked underneath with the seal, also etched in the paste, of *Ta Ch'ing Chia ch'ing nien chih*—i. e., "Made in the reign of *Chia-ch'ing* of the great *Ch'ing* [dynasty]." Of the other single colors the imperial yellow and the coral-red are among the most successful, although not equal to the finest productions of the *Ch'ien-lung* period.

The bowl illustrated in Fig. 294 is an example of the more complicated decoration of the period. It is ornamented with floral emblems of longevity in a threefold series, consisting of blossoming prunus-trees, sprays of bamboo, and fir-trees with *Polyporus fungus* (*ling-chih*), which are painted in enamel colors inside and outside the bowl in identical designs, and have the foliage and flowers pierced in parts and filled in with glaze so as to be transparent. The decoration is completed by a medallion containing melons painted in the bottom of the bowl. The seal, penciled in blue under the foot, is *Ta Ch'ing Chia ch'ing nien chih*—"Made in the reign of *Chia-ch'ing*, of the great *Ch'ing* [dynasty]."

This emperor, like his accomplished father, *Ch'ien-lung*, was fond of poetry. I have in my possession some pieces of a tea service made for him, which are decorated in soft enamel colors with bands of floral scrolls, relieved by a bright enameled ground, and defined by lines of gilding. These are inscribed with an ode of his own composition, celebrating the virtues of tea, the rhyming verse being signed *Chia-ch'ing* in two small panels of round and square outline, attached at the end of each inscription and penciled in vermilion. The full seal mark of the reign is also penciled underneath in red, within an oblong white panel reserved in the bright



yellow enamel which covers the rest of the ground. The accompanying superscription is taken from the interior of one of the little fluted dishes of this set; and it is followed by an attempt at a literal version of the simple verse, which consists of four stanzas of ten characters, each stanza ending with the same rhyme:

"Finest tribute tea of the first picking
And a bright full moon prompt a line of verse.
A lively fire glows in the bamboo stove,
The water is boiling in the stone griddle,
Small bubbles rise like eyes of fish or crab.
Of rare *Ch'i-ch'iang* tea, rolled in tiny balls,
One cup is enough to lighten the heart,
And dissipate the early winter chill."

"Written by the emperor in the middle decade of the 'little spring' month (i. e., the first month of winter, the tenth month), of the cyclical year *ting-ssü* (1797) of the reign of *Chia-ch'ing*. (Signed) *Chia-ch'ing*."

The Emperor *Tao-kuang*, who succeeded his father, *Chia-ch'ing*, reigned for thirty years, from 1821 to 1850. Some illustrations of the porcelain of his time have been already given. The finest work was lavished at this time on articles intended for ordinary use, such as soup-basins, rice-bowls, teacups with covers, and miniature wine-cups, and the seal mark of *Tao-kuang* is usually well represented in collections of such things. One of the most attractive of the styles is a plain decoration reserved in white on a soft coral-red ground, which defines the outline of sprays of bamboo, or other simple floral designs in a charming way. An idea of this may be gained from the flanged bowl in Fig. 63; the floral decoration in this, outlined in



FIG. 294.—Bowl, painted inside and outside with an identical floral decoration, with details in pierced "rice-grain" work filled in with glaze; mark, *Chia-ch'ing*.

red, has the blossoms of the China rose slightly touched with pale green. The incinerated iron oxide in these cases is very finely pulverized and intimately mixed with the enameler's plumbo-alkaline flux, and it acquires a brilliancy of tone which is not attainable by the ordinary method of painting it on combined by means of glue with a white-lead flux. This enameled red ground, which dates from the *Yung-ch'eng* period, is the "jujube-red" of Chinese ceramic art. The "medallion bowls" of this period are perhaps the most general favorites, and in London, at Christie's auction-rooms, where they are wont to figure under the name of "Peking basins," they are seldom sold for less than ten guineas a pair. The name is as misleading as that of "Nanking blue and white," as porcelain was never made at either Peking or Nanking. The bowls are found at Peking to-day, because they were sent there from *Ching-té-chên* at the time they were made for the service of the emperor. They are ordinary rice-bowls in shape, as may be seen from a glance at the typical specimen illustrated in Fig. 73. This has an etched crimson ground brocaded with conventional flowers, and the medallions which are reserved in the *rouge-d'or* ground contain sprays of flowers and fruit, while the interior is painted in underglaze cobalt-blue with a basket of flowers encircled by floral sprays. In a second set of similar bowls the medallions are filled with landscapes of lake and mountain scenery, representing the four seasons. In a third series, decorated with the same crimson ground, the medallions display the varied paraphernalia of the liberal arts known as the *po ku*, or "hundred antiques."

In addition to the crimson (*rouge-d'or*) ground, the "medallion bowls" display etched grounds of four other colors, viz., pink (*rose d'or*), which is derived also from gold; lavender, a manganese color of a charming tint approaching the shade commonly known as French gray; lemon-yellow, and blue; this last is the least successful of the colors, although the rarest, being somewhat of greenish tone. The reserved medallions usually contain sprays of prunus, magnolia, chrysanthemum, and lotus, mingled with the sacred longevity fungus and bunches of scarlet nandina berries. The yellow bowls include, in addition, another series with four medallions filled with miniature landscapes of hill scenery dotted with temples and pagodas, and a third set with three medallions containing outdoor scenes with rams, emblems of the universal revivifying power of spring, according to the punning motive, *San yang K'ai tai*, in which Yang means "spring" as well as "ram." The blue medallion bowls have the etched ground overlaid with colored clouds, and the four medallions painted with mythological subjects corresponding to the picture in the interior, which is painted in shaded blue. This is a circular medallion containing a picture of a male and female stellar divinity in the midst of clouds, with their constellations above their heads and a flock of birds flying around their feet. The picture suggests a joyous meeting of lovers, *hsi* meaning "joy" as well as "magpie," the "joyous bird" of the Chinese. The stellar divinities in the picture are the cowherd "Ch'ien Niu," riding upon a buffalo, identified with a constellation comprising portions of Capricornus and Sagittarius, and "Chih Nü," the Spinning Damsel, a Lyrae.



FIG. 295.—Melon-shaped snuff-bottle with decoration of vines, in blue and white; mark, *Yung-ch'eng*.



